



PHD

The analysis and financing of capital projects in shipping

Harvey, David Anthony

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The Analysis and Financing of Capital Projects in Shipping

submitted by David Anthony Harvey
for the degree of PhD
of the University of Bath
1987

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Abstract

University Bath

Author David A. Harvey

Title The Analysis and Financing of Capital Projects in Shipping

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Summary of Work

This thesis examines methods of appraising and financing capital projects in the shipping industry. Detailed interviews were held with 52 companies/individuals and 19 banks, with a view to identifying behaviour patterns in the area of investment and financing decisions. It was found that approaches to investment and financing decisions varied according to the size and nature of companies, and their activities. Three broad categories of company were thus identified, covering large public companies, smaller public companies and large private companies, and small or "entrepreneurial" companies. Further subdivisions were made according to the nature of activities, namely liner or bulk operations. Detailed analyses of behaviour in these three categories were then made, and similarities and differences identified. An analysis was also carried out of the approach used by banks in considering their lending decisions for the shipping industry, and the implications of this behaviour for company decision making. The results of these analyses suggested a more complex approach to investment and financing decisions than is implied by finance theory, and identified a number of points of overlap and linkage between the areas of finance and strategy. These analyses enabled an empirical assessment to be made of the practical relevance of the theory of finance as it relates to investment and financing decisions in the shipping industry, and also permitted the identification of a number of areas of overlap and linkage between finance and strategy. A descriptive model was developed of investment and financing decisions in the shipping industry, which seems likely to provide insights into behaviour in other industries.

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Finally, I should like to express my thanks to my wife Colleen, for all of her work on word processing and proof reading, and to my sons for their part in the process, in terms of additional household chores and the making of many cups of coffee.

In the final analysis the views expressed, and any errors remaining, are mine, but the support of all the above is gratefully acknowledged.

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Chapter 1

Objectives and Content of the Study

1. Aims and Areas of Investigation

The purpose of this thesis was to examine methods of appraising and financing capital projects in the shipping industry. The approach used, which is summarised below, enabled a number of important things to be done.

- (i) It enabled a detailed analysis to be made of the way in which capital projects are analysed and financed within a specific industry, namely shipping.
 - (ii) It enabled an empirical assessment to be made of the practical relevance of the theory of finance, as it relates to investment and financing decisions, albeit in one particular industry. The initial thrust was on the more generally accepted aspects of the theory of finance, but a number of criticisms of, and extensions to this theory were also assessed in relation to the findings.
 - (iii) As the thesis developed it became clear that considerable links existed between the area of finance and that of corporate strategy. It thus proved possible to examine the relationship between the two areas and to identify certain areas of overlap and linkage which enabled finance theory to be set more firmly in a corporate strategy context.
 - (iv) In fact, after these assessments had been made it proved possible to set out a descriptive model (albeit in general terms) of investment and financing decisions in the shipping industry. Given the diversified nature of a significant number of the companies in the sample, it is quite likely that such a model would also provide useful insights into investment and financing decisions in companies in other industries. The findings thus provide a detailed framework for further research.
- Nevertheless, it must be recognised that this thesis is essentially concerned with the financial and economic aspects of investment decision making. It is not intended to be seen as an attempt to devise an

all embracing theory of decision making, but rather as an attempt to identify the nature of, and the weighting given to, the various aspects of economic and financial analysis within the decision making process, as it relates to investment and financing, in a specific industry.

Interest in this area was prompted by a number of factors.

- (i) Shipping is an extremely capital intensive industry, with the cost of new vessels running into many millions of pounds. Most decisions, therefore, require careful consideration, and appraisal could reasonably be expected to cover strategic issues, individual project analysis and alternative financing methods. An examination of the decision making process should thus provide useful insights into the relative importance of these aspects, and inter relationships between them.
- (ii) The industry is one which is international and extremely competitive, with overcapacity existing at world level, and likely to persist for some years. It is, or has been, a cyclical industry, with long periods of recession typically being followed by short periods of boom. The risks are high, and forecasting is difficult. Therefore one might expect that methods of dealing with risk would be fairly well developed. As a minimum the study should provide considerable insight into ways in which decisions are made in extremely volatile and uncertain environments.
- (iii) Concessionary interest rates and other subsidies are frequently available for capital acquisitions. Loans of approximately 80% of the capital cost of an asset are typically available. The effects of easily available subsidised financing packages has put more emphasis on alternative financing methods than one would expect to find in, say, a manufacturing concern. It also means that debt/equity ratios can be much higher than for companies in many other industries. One might, therefore, expect that views on capital structure would be clearly defined. The opportunity clearly exists for a wide range of alternative capital structures. A study of the industry would thus afford the opportunity to assess the perceived importance of capital structure in investment decisions. If no optimal capital structure were found to exist, serious questions would need to be raised about the discount rate to be used in the application of dcf techniques.
- (iv) Prior to commencement of this study, a number of investment appraisals drawn up for ship acquisitions had been examined. These suggested that a certain confusion existed in the industry between the investment and financing decisions. Cash flows used for discounting purposes typically showed both operating and financing flows (i.e. included capital repayments, plus interest charges). Dcf

returns calculated were thus returns on the equity interest in projects, and not total project returns. Such an approach, when coupled with a difficult forecasting exercise for operating flows (and often with considerable optimism on the part of decision makers) made possible the calculation of reasonable returns on equity for projects which were really quite poor – provided that large sums were borrowed at subsidised rates. This in turn reduces the incentive for using equity, and makes the estimating of individual project risk quite difficult. Several questions arose from this. First, did shipping companies typically make dcf calculations which combined both financing and operating aspects of a decision? Second, if they did, what kind of discount rate did they use? Third, did such calculations usually have the effect of increasing the reliance on borrowed funds as compared with the use of equity? Indeed, could the generally acknowledged shortage of equity (at least in the UK) be partly attributable to the use of faulty appraisal techniques? Fourth, how was operating risk and financing risk separated and assessed in relation to individual projects?

Questions such as these suggested that an important aim of this study ought to be the assessment of the relevance of certain parts of the theory of finance, relating to investment and financing decisions, found in the majority of standard finance texts. Specifically the study ought to provide an assessment of the practical relevance of finance theory in the shipping industry in the following areas:

- (i) The extent to which share price or wealth maximisation was seen by decision makers as an objective, whether explicit or implicit. Other corporate objectives could be identified in the study, and an assessment made of their importance.
- (ii) The extent to which discounting techniques, and other appraisal techniques were used in making investment decisions, and their relative importance. The basis of the various calculations used would be identified.
- (iii) The extent to which investment and financing decisions could be separated.
- (iv) The extent to which perceived optimal capital structures existed.
- (v) Linked to these last two was consideration of the choice of discount rate used when discounting techniques are used.

Questions such as these, however, represent only part of the process. Given the wide ranging criticisms which have been made of finance theory, and the existence of an important area of literature covering corporate planning and strategy, it was decided to broaden the questioning to include wider

issues covering strategic, economic and industry issues. Clearly such questioning needed to be fairly specific, given that the aim was the identification of potential links between finance and corporate strategy, and the emphasis was thus placed on questions relating to economic and financial analysis.

The following areas were thus specifically addressed:

- (i) The strategic issues which were considered in recent or planned vessel acquisition, or other major investment decisions within the company, and their relative importance in the final decision.
- (ii) The commitment of the various companies to the industry, or sections thereof - this was linked to questions about diversification/specialisation, etc.
- (iii) The extent to which "macro" variables were considered in decision making and the type of variables considered important. Questions in this area developed as the linkage with corporate planning and strategy became more apparent.
- (iv) Whether different types of vessel were appraised in different ways, and the reasons for any such differences.
- (v) Methods of forecasting for different types of investment, and the nature of the number crunching exercises gone through.
- (vi) Methods of financing investment in shipping, and views taken on different forms.
- (vii) Attitudes towards exchange risk.

When taken together, answers to these questions enabled a fairly clear picture, or series of pictures, to be drawn, as to how companies actually approach investment and financing decisions in shipping. In fact behaviour patterns were found to differ across the companies included in the analysis, depending in general upon the type of company and the activities in which they engaged. Three principal categories of company were identified, and detailed analyses of behaviour for these categories follow in later chapters. These analyses provide an opportunity to relate actual behaviour to the traditional theories of finance (together with various extensions and criticisms), and to identify potential or actual links with corporate strategy. They also provide the framework for the development of a descriptive model of investment and financing, based upon observed behaviour in the companies included in the survey. This model is clearly based upon an analysis of the factors identified above. No systematic attempt was made to address issues relating to the impact of such things as organisational structures, internal politics, or inter-personal behaviour on the decision making process. The weakness

of such a model is apparent, but similar weaknesses can be seen to exist in most theories or models of rational economic behaviour, and certainly in the theory of finance. The model developed can nevertheless be seen as a positive theory based upon actual behaviour.

In identifying behaviour patterns, and establishing alternative theories, it is necessary to ascertain the extent of any constraints on decision making imposed or influenced by the suppliers of finance, and to assess their impact on corporate decision making. For this reason a study was also included of bank attitudes and approaches in the following areas:

- (i) Any distinguishing features of shipping as an industry, as compared with other industries.
- (ii) Information required (or expected) by the bank from the applicant.
- (iii) The information available within the bank itself, and its use in the decision making process.
- (iv) Criteria used in making a lending decision.
- (v) Types of finance typically available, and the terms on which it is offered.
- (vi) Attitudes towards lease finance and credit worthiness: specifically leasing and debt capacity, and leasing and the period of finance.
- (vii) Views on capital structure/gearing considerations.
- (viii) Covenants or accounting ratios required.
- (ix) Future trends in the provision of finance for the industry.

Some of these areas are clearly linked to the tests of finance theory referred to earlier, particularly those relating to capital structure, accounting ratios, and accounting information generally. For example, if the banks consider debt/equity ratios to be an important lending consideration, they will be an important consideration to the investing company, because of the amount of debt finance typically taken up. Other areas referred to above are specific to the industry. Answers to these questions help to establish the particular context in which decisions are being made, and the importance of that context.

2. Structure of the Thesis

The structure of this thesis follows the above ideas, and consists of the chapters identified

below.

Chapter 2 provides an outline of the industry, in order to provide an understanding of its size and peculiarities. Nowhere in this study was any attempt made to generalise results into non-shipping areas. This may well be possible, particularly for large quoted public companies, but evidence was collected in the context of this particular industry, and the limitations of the study must be recognised.

Chapter 3 reviews the literature on finance, and identifies key concepts and theories, together with major criticisms levelled at the theories. It aims to provide an overview of the theory of finance, as it relates to investment and financing decisions, against which subsequent findings can be measured.

Chapter 4 reviews the literature on corporate planning and strategy, together with related approaches. However, it must be recognised that the aim of this chapter is rather different to that of chapter 3. Among other things, this thesis aims to identify areas of overlap and linkage between ideas from finance theory and those relating to corporate strategy. It does not aim to analyse systematically the practical relevance of the various theories and supporting techniques relating to corporate strategy. Its principal thrust is financial. This chapter should be seen in this light, as providing an overview of the literature on the area, so as to provide a basis for the identification of the areas of overlap and linkage between ideas from finance theory and those relating to corporate strategy.

Chapter 5 sets out the methodology to be used in this study, covering the overall approach, the basis of the interviews and sample selection.

Chapter 6 sets out the results of a survey on bank practice as regards lending on ships. The behaviour of banks can be seen as an important contextual influence on behaviour within shipping companies.

Chapter 7 outlines the approach used in the Shipping Company pilot study, together with some tentative models of behaviour for the companies to be analysed.

Chapter 8 analyses investment and financing behaviour in category 1 companies, namely large public companies with considerable shipping interests. Various interesting differences according to the type of activity or nationality are also identified.

Chapter 9 analyses behaviour in category 2 companies, namely smaller public companies and medium to large private companies, with considerable shipping interests.

Chapter 10 analyses behaviour in small or "entrepreneurial" companies including a number of

Greek companies.

Chapter 11 summarises the results of the previous three chapters, and identifies the major areas of similarity and difference between the three categories, so as to provide a framework for both an assessment of finance theory, and the development of a descriptive model, in the area of investment and financing decisions in the shipping industry.

Chapter 12 relates the results of the previous four chapters to chapters 3 and 4, so as to provide an assessment of the practical relevance of the theory of finance in this area, and to identify areas and ways in which the theory can be improved, together with an identification of areas of overlap and linkage with corporate strategy. A descriptive model of investment and financing decisions in shipping is then set out, based upon observed behaviour. The thesis concludes with an indication of the limitations of this study and of directions for future research.

Chapter 2

The Shipping Industry

1. Introduction to and Structure of the Chapter

The purpose of this chapter is to provide an overview of the industry, so as to set subsequent discussion and analysis in context. The chapter specifically aims to describe the nature of the industry, to identify any features of the industry which require particular attention, and to identify the more important commercial aspects and problems facing the industry at the time of the analysis (1982-4). It perhaps needs to be noted that the commercial problems facing the industry in 1987 seem to be relatively unchanged from those facing the industry in 1982-4. Particular emphasis will be given to those aspects and problems which relate most closely to the investment and financing decisions.

Given the complexity of the industry the chapter is subdivided into the following sections.

- (i) The nature of the industry. This section will cover shipping as a service industry; the relationship between the demand for shipping services with GNP (including reference to possible distortion effects); types of shipping services, together with their organisation; the international nature of the industry and its geographical spread; and a variety of political influences, specifically relating to national flags and flags of convenience, the UNCTAD Code and less developed countries, the impact of Soviet policy, shipbuilding, and shipping subsidies.
- (ii) Capital intensity, costs and financing. This section will cover such things as the absolute size of the industry; an indication of typical costs involved; typical approaches to financing; and current levels of equity in the industry.
- (iii) The current commercial setting in the industry. This section will examine the current situation with regard to supply/demand relationships; the volatility/cyclicality of the industry; and a variety of

other factors of potential significance for shipping companies. These will include reference to political, commercial and technological factors.

(iv) Particular features of the industry in the UK and USA. This is considered necessary given the preponderance of such companies in the analysis.

2. The Nature of the Shipping Industry

2.1 Shipping as a Service Industry

It is important to recognise that shipping is a service industry, with the aim of providing transport for goods and materials from one part of the world to another. The demand for shipping services is thus a 'derived' demand, being dependent on the demand for goods and materials. While certain forms of transport, such as pleasure cruises and holiday travel, may be regarded as 'consumer services', the demand for the vast majority of shipping services will depend upon the level of economic activity and the desire to transport goods and materials from one place to another. Clearly social and political factors can influence the demand for shipping services as well as economic factors. For example, subsidies can be used to encourage trade on certain routes considered to be socially and/or politically desirable. Military cargoes or cargoes to support political initiatives (e.g. the exportation of aid in the form of grain cargoes from the USA to Egypt) also clearly influence the overall level of demand for shipping services. Overall the demand for shipping services will thus depend upon the level of economic activity, together with a number of other social and political factors.

In fact the relationship between the demand for shipping services and GNP has traditionally been fairly stable. Just as GNP has followed a somewhat cyclical pattern, so has the demand for shipping services. Various estimates have been made of the relationship between the two, and a 1% change in GNP has typically been associated with a 2% change in the demand for shipping services. In the USA a 1% rise in US GNP was estimated to produce a 1.336% increase in total US waterborne commerce, over the period 1958-1978. (Simat 1979)

The implication of the above is that it would be relatively easy to predict total waterborne cargoes if GNP could be predicted reasonably accurately. However, the above relationship relates to a

period of much greater political and economic stability than is now found, and far less confidence exists with regard to the continuation of the same relationship into the future. In more recent years GNP has been affected by such things as foreign economic activity, particularly that relating to OPEC, and the greater development of government social and regulatory programmes. The oil crisis undoubtedly left its mark in terms of the Western nations, with growth rates of GNP in the 1970's being much lower than those of the 1960's. Uncertainties remain about the underlying strength of the economies of various countries, and the efficiency of governmental economic policies. In short, there are now considerably more uncertain variables, or distortion effects, involved in projections of GNP and associated growth rates than there were in previous years. Such things as changes in the demand for, and cost of, energy, particularly oil; crop failures; politics (e.g. USA/Russian grain embargo, the Gulf conflict, etc.); all impact on GNP and associated growth rates. The prediction of GNP, and hence the demand for shipping services, is thus now a much more difficult exercise.

Some indication of these problems can be seen from Figure 1, showing total OECD production from 1970 to 1983. Of particular interest in this context is the difference in forecast figures over a six month period, indicating the difficulties experienced even by the most sophisticated analysts. The volatility of the figures over recent years is also evident.

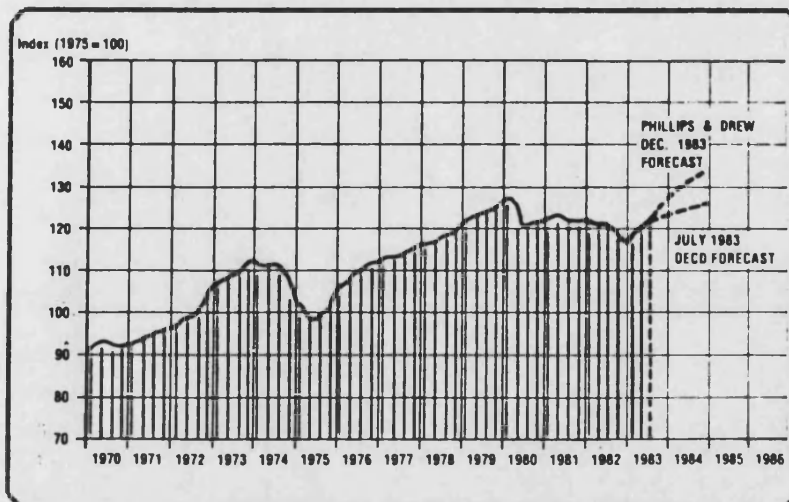


Figure 1. Total OECD Industrial Production (1970 - 1983)

Source : Lloyds Shipping Economist - December 1983.

The position with regard to disaggregation of GNP figures into industries, commodities and related trade routes is even more difficult. Disaggregation of this type requires a much more

sophisticated set of data, covering historical data for commodities and trade routes, together with estimates of GNP for trading partners and predictions of trade flows between nations. In making estimates of this type the aspirations and political attitudes of trading partners need to be considered, together with the likelihood of delays/strikes, crop failures, developmental or other aid, changes in the industrial infrastructure of the trading partners, and political developments such as protectionism, cargo sharing, etc. Exchange rate fluctuations can pose particular problems, as is evidenced by the serious imbalance in the North Atlantic trades in recent years, caused by the relative strength of the dollar in relation to European currencies.

The overall conclusion of this section is that the total demand for shipping services is a function of GNP and GNP growth, plus a variety of other complicating variables, and is unlikely to be influenced much by anything done by the shipping companies themselves (other than at the margin, for such things as cruising, ferries, etc.). Forecasting the overall level of demand for shipping services is thus an increasingly difficult exercise. Forecasting levels of demand for individual trade routes requires even more variables to be included, with a corresponding increase in the difficulty. This difficulty of forecasting is an important factor in subsequent sections of this study, since traditional appraisal methods place great emphasis on forecasting cash flows relating to new projects. Difficulties of the type outlined above are likely to have an impact on the importance attached to these methods.

2.2 Shipping Services – Type and Organisation

The purpose of this section is to provide background information on the shipping industry, in terms of market segmentation, ship types, and related areas of activity.

In considering the shipping industry it needs to be recognised that ocean shipping is a highly diversified industry, which covers numerous separate markets, each with its own, unique economic characteristics. The days when most ships could carry all sorts of different cargoes are long gone, and the market is now effectively segmented into a number of distinct areas. Brief details of the major ship types are given in Table 1, while an indication of the relative importance of ship types in terms of tonnage is provided by Table 2.

Ship Type	Description
Container Ship	Vessel designed to carry containers (usually in twenty or forty feet units). May be fully cellular (i.e. completely containerised) or partial. Some containers may be refrigerated. Containerships in most trades are volume and not weight limited.
Roll on/roll off Ship	Vessel designed to carry highway trailers (e.g. wheeled containers) with a clear intermodal capability, able to interface directly with land transportation.
Barge Carrier	A vessel designed to transport barges instead of containers. Barges can typically be loaded/unloaded away from docks
Dry Bulk Carrier	Vessels designed to carry large quantities of bulk cargoes. May be sub-divided into ore, coal and grain.
Combination Carrier	Vessel designed to be able to carry more than one specialised cargo, e.g. oil and bulk carrier (OBO).
General Cargo Ship	Vessel designed to carry a variety of dry cargo.
Other Dry Cargo Ships	Variety of specialised vessels to carry such things as forestry products, cement, livestock, vehicles, fruit etc.
Oil Tanker	Vessel designed to transport oil products in bulk quantities. Of a variety of sizes, including very large crude carriers (VLCC's) and ultra large crude carriers (ULCC's).
Chemical Tanker	Vessel designed to carry chemical products.
Liquified Gas Carrier	Specialist carrier for gas products - Liquified Natural Gas (LNG) and Liquified Petroleum Gas (LPG).
Parcel Tanker	Vessel designed to carry small parcels of different liquid and chemical products.
Other Tankers	May include tankers designed for special purposes. e.g. asphalt, bitumen, molasses, wine and vegetable oil.
Passenger Liner	Vessel designed to carry passengers - used for specified routes and/or cruises
Ferry	Vessel designed to transport goods/passengers/vehicles on a prescribed route.

Table 1. Major Ship Types

Types	'000 tons gross
Oil tankers	175,004
Liquefied gas carriers	7,393
Chemical tankers	2,249
Bulk/oil carriers	26,241
Ore & bulk carriers	83,355
General cargo	82,610
Container ships	11,274
Other vessels	3,121
Total	391,247
Non trading types	28,663
World total	419,911

Table 2. Types of Ships in the World's Merchant Fleet

Source: Lloyd's Register of Shipping Statistical Tables, 1980

The majority of ships in the world operate either as liner vessels or as tramps. The distinction between them basically relates to their method of operating and the emphasis of their marketing efforts. For a detailed analysis of these differences see Sletmo and Williams (1981) and Frankel (1982). A summary is given below. Table 2 indicates clearly the importance of the liner and bulk trades, particularly the latter, in relation to the overall world supply of tonnage. In passing it is worth noting that the passenger trade does not account for a very large proportion of the total, although clearly it may be significant for individual countries or companies.

Liner Operations

The Liner services follow published, relatively fixed schedules, on pre-determined routes. This in turn has a profound effect on the type of cargo carried, and thus on the method of carriage. As Sletmo and Williams (1981) have pointed out, the importance of the availability of scheduled services varies with the type of products shipped. Raw materials, such as ores and oil, tend to be carried in quantities which can justify the use of a complete ship, often, but not necessarily, on a regular basis. Use of such vessels can thus be arranged by the shipper (through charters) as and when convenient. On the other hand, manufactured goods, which are likely to be sold in many different markets, are typically shipped in relatively small lots, and certainly usually take up only a small part of the capacity of a liner vessel. Given the competitive pressures which exist in the various markets for manufactured goods, it is important for businesses to know that they can ship their goods quickly and efficiently, at a

predetermined time and cost, and this is the function of the liner trades. Since manufactured goods are typically high value goods it is not surprising to find that the liner trades account for a greater proportion of total shipping income than one might expect from the tonnage committed to this particular sector of the market. Sletmo and Williams (1981) estimate that in 1970 the liner trade accounted for some 20% of total tonnage but 43% of total shipping revenues.

Clearly the emphasis of the liner trades is the carrying of relatively small consignments of goods for many shippers. The development of the container vessel and what is referred to as 'intermodal transport' reflects this market. A 'full load' for a shipper may be a container, rather than a ship, and the container can be transported from manufacturer to retail outlet, using trucks, rail, and ships. The development of the container fleets reflects the needs of the industrialised nations. Hence liner vessels on routes between less industrialised nations are likely to be less specialised in terms of the amount of space given over to containers.

Liner operations are typically significantly more expensive than other forms of shipping operations. The vessels themselves are costly to build and operate. Perhaps more important is the need for a sophisticated infrastructure of support services, notably expensive terminal operations and agency networks. For this reason liner companies are often large companies, sometimes being part of a larger, diversified conglomerate. In recent years the search for economies of operation has led to substantial increases in the size of liner vessels. (e.g. the ordering of 12 container ships, each with a container capacity in excess of 4000 twenty foot equivalent units (TEU's) by United States Lines.)

The size and productivity of modern liner vessels is such that they typically will represent a significant proportion of cargo carrying potential on a particular route. Hence if liner companies are to make adequate returns it is important that liner routes do not suffer from excess capacity, and that some degree of coordination exists on each route. Sletmo and Williams have estimated that even on the North Atlantic run, which carries some of the largest volumes of trade, no more than 30 vessels are needed. They point out that this trade volume is likely to support no more than six to eight competitive and efficient liner companies operating on this particular route. Very few services offer the kind of volume that exists on the North Atlantic run, and the implication is clear that other routes are unlikely to support as many operators.

Sletmo and Williams (1981) point out that cargo volumes cannot typically be increased significantly by reductions in rate levels. Shippers are thus in a strong bargaining position in relation to

shipowners, unless some kind of countervailing bargaining power can be introduced by the latter. Typically this is achieved by the use of liner conferences or consortia, covering specified routes. These organisations set tariffs and schedules for the routes coming within their agreement. All conference members typically have to follow laid down and agreed policies, which may include such things as the allocation of trade shares, restrictions on discounts and rebates, and pooling of earnings and sailings. Sletmo and Williams (1981) consider that liner conferences are the main way in which owners of liner companies can enhance their bargaining power, in what are inherently unstable markets. They point to the problem of developing rate structures which will ensure that the liner companies achieve reasonable utilization levels, so that fixed costs, which are substantial, can be covered, and reasonable levels of profitability can be achieved.

The Tramp Trades

The tramp ship, by comparison with liner ships, has no fixed itinerary. It picks up cargo where needed, and typically looks for new business for each voyage. Most tramp ship voyages are made on behalf of a single shipper, and most carry a full load of a bulk commodity such as coal or grain. The bulk trades include both dry bulk, covering iron ore, grain, coal, alumina, phosphates and a number of special and minor commodities, and also liquid bulk, typically referred to as the tanker trade. The tramp trades also include general cargo ships and other specialist ships such as forestry products carriers. While there is a wide range of commodities which are carried on tramp ships the principal cargoes are oil, iron ore, grain and coal, which account for the bulk of the ton-mileage and therefore determine the volume of shipping requirements.

The tramp ship satisfies specific transient needs, as they arise. Basically the tramp shipowner offers an operating ship. This vessel can then be 'chartered' on a 'voyage' basis or a 'time' basis. No published information exists specifying shipping charges or schedules for particular movements of cargo, although considerable information is available on recently agreed 'fixtures' (i.e. prices for specified cargoes on specified routes for specified periods of charter). A person who wants to charter a vessel (or part of it) will ask a broker to examine the market and find the tramp shipping companies which will offer the lowest price of hire. Strictly, rates are negotiated for each individual charter, but rates reflect market conditions, and considerable guidance can be obtained from current rates being obtained by shipowners. Rates will vary according to such things as the risks involved, the nature of

the cargo, and the time of the charter. Long-term charters are generally likely to be slightly cheaper than short-term charters, since they provide regular employment in an otherwise volatile industry.

Charters generally take one of four forms.

- (i) Voyage charter - where a vessel is hired to transport a specified cargo from one port/s to another port/s.
- (ii) Time charter - where the charterer gets the use of a vessel for a particular period of time.
- (iii) Bareboat charter - where the charterer hires a vessel, without crew, for a given period of time. The charterers thus take responsibility for all operations of the ship and for all operating costs.
- (iv) A contract of affreightment - which is a long term agreement with a shipowner to ship a certain amount of cargo between two ports, on vessels and at times of the shipowner's choice.

It should be clear from the above points that the characteristics of the tramp shipping markets are quite different to those of the liner markets. For example, it is quite possible to enter the tramp shipping market with a single ship, so no large corporate infrastructure is needed. Inevitably, the conference system is virtually non-existent in the tramp trades, since companies can enter and leave the market easily, quickly and relatively cheaply (at least in relation to the liner trades). The fairly fundamental differences between the liner and tramp trades account for significant differences in behaviour, as will be seen in later chapters.

2.3 Size and Spread of the Industry

Shipping is one of the few truly international industries in the world. The Fairplay Shipping Year Book for 1981 listed 43 nations with merchant fleets. The largest fleet listed was in fact that of Liberia, about which more will be said in the next section, since Liberia is a "Flag of convenience" registry. The other major flags were (in decreasing size order): Japan, Greece, United Kingdom, Panama, USSR, Norway and the USA, with gross tonnage for each country in this leading group of between 18 and 80 millions. A further nine nations had registered gross tonnage of between 5 and 12 millions. This group included nations such as China, Spain and India. The remaining nations listed had registered tonnage of between 1 and 5 millions. This group contained a variety of different nations, from developed nations such as Canada and Australia, through Communist block nations such as Poland and Romania, middle eastern nations such as Saudi Arabia and Iraq, and others such as Argentina,

Cyprus and Indonesia.

Obviously, a large number of nations have an active interest in shipping. However, the dominance of the fleets of the first two groups referred to above needs to be recognised. In terms of the volume of world tonnage the first nine national flags (or flags of convenience) listed above, account for approximately 2/3 of the total, with the next group of nine accounting for approximately 18%. This dominance by certain nations, particularly the developed nations, has led to certain pressures for change, which are dealt with below.

Shipping is not only a large industry in terms of geographical spread. It is an enormous consumer of capital. Costs of acquiring ships are very high. For example Table 3 includes a selection of actual new building prices reported by Fairplay in 1980.

Type & number of ships	Size(dwt)	Country built	Delivery date	Price
2 Multi-purpose dry cargo	15,000	UK	mid 1981	£10.5 m total
2 Refrigerated cargo liners	10,000	UK	mid/end 1981	£25 m total
3 Bulk/container (1466TEU)	70,000	S. Korea	Sept-Dec 1982	US\$99 m total
3 Container (1700 TEU)	-	Netherlands	mid 1981/2	US\$114 m total
2 Coal bulk carriers	138,000	S.Korea	Feb/Apr 1982	US\$80 m total
Geared bulk	38,500	Japan	May 1982	Y 6,000 m
2 OBO carriers	76,000	Japan	1982	US\$86 m total
2 Crude oil tankers	120,000	UK	late 1982	£50 m total
Products carrier	19,500	S.Korea	1981	US\$16 m
6 LNG carriers	125,300	USA	1982/3	US\$1,000 m total

Table 3. Examples of recent newbuilding prices
Source: Fairplay Shipping Year Book 1981

Clearly the size of the investment decision for a shipping company is considerable. The cost of individual vessels may run into many millions of US dollars, particularly for specialist ships such as LNG ships or cruise ships. Costs of in excess of \$150M per ship would not be unusual in these areas. For companies planning investment on a fleet basis the costs are massive. For example, the order by United States Lines, of twelve 4,000 ton TEU container ships is estimated to have cost between 600M and 700M US dollars. The cost of building these ships in the United States, (they were built in S. Korea)

would probably have been at least twice this figure. Oceanic Finance Services Ltd. in a 1979 Datapaper analysed the amount of capital that the shipping industry had used between 1970 and 1978 on newbuildings. They estimated the delivered cost of newbuildings for the world commercial fleet for the period to be approximately \$120,000M. Certain assumptions were made which might result in slight inaccuracies in this figure, but the basic message remains. If one considers that these figures excluded the Russian and Eastern bloc countries, and the Liquified Gas Carrier Fleet, it is clear that the above figure represents a conservative estimate of expenditure for the period. In the same paper it was pointed out that, given the need to replace tonnage delivered in the early seventies, it was unlikely that the expenditure in the early eighties will fall below US \$15,000 million per annum. These figures make it clear that shipping investments are likely to be major decisions for the companies concerned, justifying detailed analysis at both a strategic and a project level.

2.4 Political factors affecting the industry

Given the international nature of the industry, with large numbers of suppliers and customers, one might expect the shipping markets to act in a way which is close to that associated with the economic analysis relating to conditions of perfect competition. Such an idea is reinforced by the extremely efficient flows of information relating to the industry, with close to perfect knowledge (of the current situation) being possible. In practice a high degree of efficiency does exist within the shipping market. However, there are a number of influences which might be described as politically based, which de-stabilise the industry. These influences, which are dealt with in more detail below, tend to lead to decisions being made in some sectors of the industry, where the profit motive is not necessarily paramount. This in turn may lead to profits being less than one might expect in conditions of perfect competition. It is therefore not always possible to earn even an adequate (i.e. normal) level of profit. The major influences considered are:

- (i) The position and importance of the flags of convenience
- (ii) The aspirations of the less developed countries, particularly through the UNCTAD Code
- (iii) The impact of the communist bloc countries, and the difficulties western companies have in competing with fleets of such countries, operating under difficult political and economic systems
- (iv) Maritime aids and subsidies

(v) The importance of the shipbuilding industry in political terms

(vi) Issues of national security

In practice it is frequently difficult to determine precisely which influences are most important at any one time. Political pressures change dramatically over short periods of time. However, in making assessments of future trading conditions, shipping companies have to consider these factors, and make judgements accordingly. As an example of the difficulties involved, and the reasons behind certain political decisions, it is worth considering the position of the United States with regard to cargo preferences and cargo reservation. Morison (1984a) has estimated that in 1980 more than one third of the cargoes, by volume, of US flag vessels, were hauled because of the cargo preference rules. Whether such a governmental response is due to concerns of security, unfair competition, shipbuilding capacity, or any other political pressure, is far from clear.

The potential importance of political influences of the type identified above, and analysed in more detail in succeeding sections, is enormous. The problems, however, of incorporating such variables into forecasting and appraisal for individual companies, are considerable. Frequently these factors seem likely to form part of a background against which strategic decisions are set, with broad judgements being made of the likely impact of the various influences at a particular time. However factors such as these are handled, they are likely to have a considerable impact on the decisions of most shipping companies, either implicitly or explicitly, at some stage or another.

Flags of Convenience (FOCS)

A vessel registered in a particular nation is said to be operating under that nation's 'Flag'. The significance of this is that a vessel is subject to the law of the country whose flag it is flying, and the rules and regulations of the national ship agencies. Income and profits taxes also depend upon the state in which shipping companies are domiciled. The so-called 'Flags of Convenience' have developed to encourage the registration, in particular countries, of vessels whose beneficial owners reside elsewhere. In general Flags of Convenience are associated with more liberal regimes in terms of tax and operating regulations. A particular feature which frequently arises is that FOC ships, even if beneficially owned by companies from the developed nations, are manned by low cost crews from the less developed countries. Significant cost differentials thus exist for FOC registered ships as compared with those of other National flags, with perhaps the greatest differences being found with American

ships.

FOC's have incurred the displeasure of UNCTAD, because of the fact that the fleets of the developing countries increased only slightly in the seventies, as a proportion of the world fleet. The employment of seamen from less developed countries, on FOC ships, is held to be partly accountable for this fact (see for example Branch (1982) P219-222). Generally, therefore, the less developed countries are pressing for the removal of flags of convenience.

In the developed nations much of the opposition to FOC's comes from two fronts. Firstly the trade union movement is clearly concerned with the loss of jobs to national members of their unions. The second cause for opposition comes from strategists and politicians concerned with the maintenance of a merchant marine capable of being used by a national government in a time of urgency. Vessels registered under the national flag can clearly be requisitioned in such circumstances, (e.g. the requisitions made by the British Government at the time of the Falklands). FOC ships, even beneficially owned by developed nations, are not so easily obtained and controlled.

It perhaps needs to be pointed out that FOC's are not seen as bad by all parties. Indeed, from the viewpoint of many shipowners in the developed world (particularly the USA) FOC's represent a 'solution' to the problem of being able to participate in markets in which they could not compete, if they were forced to operate at their own domestic costs. There is no doubt that without FOC's there would not be much of an American presence internationally in the bulk trades. US ships are simply not competitive in these markets, and the business typically goes to owners who can offer efficient operations at the lowest cost. Companies in other developed countries are moving in the same direction (e.g. consider the recent decision by BP to flag out its remaining ships). As it is, FOC's have enabled the American controlled fleet under the Liberian and Panamanian flags to be built up to the stage where it accounts for more than 10% of the total bulk tonnage in the worlds merchant fleets. Given that it costs two to three times more to build and maintain a ship in the USA than in many other countries, with crew costs two to eight times more, it is clear that without FOC's the United States would not be in the international bulk trades at all.

Other developed nations have used FOC's for similar reasons to the USA. Some countries have used them for political reasons, for example, Israel, South Africa, Taiwan, to head off difficulties which might arise in trading with particular countries. Several Hong Kong owners appear to have used FOC's in preference to the British flag. Several Greek companies used FOC's during the period of

political instability in Greece, but most of these have now changed back.

The growth of the FOC fleets is confined to the bulk trades, as distinguished from the liner trades. In fact the growth of these fleets roughly parallels growth in the international bulk trades. Given the various pressures which exist in the system, both political and economic, it is not clear that this relationship will continue indefinitely into the future.

The UNCTAD Code of Conduct for Liner Conferences

The UNCTAD Code is a proposed procedure governing the operation of liner conferences, which may have a significant impact on certain companies operating in the liner trades. The origins of the code can be traced back to the dissatisfaction of the less developed countries with their share of trades, and in particular their ability to join 'closed' conferences to Europe and Japan.

The principal points of substance in the code are that conferences will be 'open' to the national lines of the countries they serve, but membership for carriers of other countries (so called third flag countries) may be limited. Cargoes carried by a conference between two countries shall be shared equally by the ships of those countries, except for a portion made available to third flag cross traders. The proportion generally suggested for cross traders is 20%, hence the so-called 40/40/20 rule. The code also proposes that decisions regarding trade between two countries cannot be taken without the consent of the national flag lines of both.

In fact considerable reservations exist with regard to this code, principally from the developed nations. Various reactions have reduced the impact of the code on cross traders. For example, the European countries developed the 'Brussels Package' in 1979, which limits cargo sharing provisions to their trades with emerging nations, considerably reducing the potential impact on trade between developed nations. The 40% allocation to the fleet of an EEC state and the 20% set aside for cross-traders will be left open to the fleets of all EEC states and to those of any other OECD states which agrees to apply the same formula to their own trades with developing nations.

The Code received sufficient ratification to be implemented in 1983. It remains as a political factor of potential significance in years to come. The United States has been a particularly strong opposer of the Code, as is evidenced by the following comments taken from the Journal of Commerce - Morison and Dunlop (September 23 1983).

"Maritime Administrator Harold E. Shear warned ... that if forthcoming talks fail to blunt the impact on the US flag carriers of the UNCTAD Code of Conduct for Liner Conferences, this country is prepared to act."

"... if the discussions with the CSG (Consolidated Shipping Group) are unproductive and US flag carriers are shut out of their cross trades, the United States is prepared to take firm action to counter such discrimination ... (such steps) could be in the form of restricted access of cross-traders to our trades".

Statements such as this simply reflect the long held opposition of the USA to cargo allocation of this type. In 1979 President Carter, in a speech deploring the general trend towards such allocation measures, and the UNCTAD Code in particular, said.

"We shall continue to resist the imposition of cargo-sharing regimes whether bilaterally or multilaterally.

"At the same time we should not allow our interests to be compromised by the actions of other nations which may impede the ability of our ships to participate in world trades. Cargo sharing policies adopted by other nations cannot be allowed to force our ships from any trade in which they should be entitled to compete. While it is our policy to refrain from cargo sharing agreements as a general matter, we will be prepared as in the past to protect the competitive right of US carriers." (See Nemirow 1979: P12)

The US has thus negotiated a number of cargo sharing agreements where considered necessary to protect US interests, with countries such as Argentina, Brazil and Russia. Further developments in this area must be seen as likely.

Clearly the UNCTAD Code, together with the cargo sharing response which might be developed in response to it, will introduce a further degree of uncertainty into the liner trades. At least one banker, Mr. Jim Davis, has pointed out that the liner code does nothing to enhance the creditworthiness of liner companies.

"The Liner code, through weakening the hold of the established operators in some of their traditional trades and probably encouraging the placing of further orders for new tonnage by developing country lines, does nothing but deepen my pessimism concerning the general prospects of liner shipping as a suitable sector for commercial financing." (See Buckingham 1983)

The code must therefore be seen as a force for change which introduces greater insecurity to the liner industry in terms of both trade shares and financing ability.

The impact of the Soviet and Eastern Bloc Countries

By the end of 1983 the Soviet merchant fleet was estimated to number some 7,500 ships, making it the worlds largest in numbers. This of itself might not be significant if the fleet operated

along strictly commercial lines. However, this appears not to happen. The Soviets have been accused of cutting rates to levels well below cost, with a view to capturing a large share of the trade. It has been estimated that Soviet ships move about 5-6% of all world cargoes although the Soviet economy generates only 2.5% of world trade (Tagliabue 1984). In certain parts of the world the imbalance is much greater. For example, Russian ships are estimated to carry about 20 times as much cargo as German ships in West German/Soviet trade. Particular concern has been expressed by leaders of both Government and business in Europe at the Soviet inroads. Accusations have been made that the Soviets operate without paying attention to costs, making competition virtually impossible. Undoubtedly Soviet lines have achieved considerable inroads into certain trade routes previously dominated by the Europeans e.g. coffee and cotton, by undercutting prices by substantial amounts (see Tagliabue).

There is little doubt that the attitude to costs and profits is very different between Soviet bloc countries and Western countries. Costs themselves are considerably lower for the Soviets, with fuel generally being available at pre-1973 prices, crew costs being much lower, and depreciation and financing costs being low or non-existent (see for example Stryker 1979). The two systems are simply not comparable. Soviet crew members regularly undergo military training, and can be used for a variety of military purposes. Soviet vessels are generally much more heavily built than Western merchant ships, which are designed with economy in mind. They thus have greater military potential than Western ships. This in turn has led a number of western observers to express considerable concerns about the impact of Soviet merchant marine policy on the security of the West. Concerns have been expressed most strongly in the United States, where the strength of the Soviet merchant marine is in stark contrast to the weakness of the American merchant marine (or at least that part registered under the American flag). It has been argued that national security has an economic dimension which is being threatened by the growth and policies of the Soviet block fleet (Van Lier 1979). Precisely how such threats will be perceived by western governments, and the effect that it will have on policies that affect shipping, is unclear. This point will be returned to in a later section.

Maritime Aids and Subsidies

Given the large number of suppliers of, and customers for, shipping services, one would expect the market to operate freely and efficiently. In practice this is not so. Government assistance in one form or another is common, and it has been argued that the level of a nation's involvement in shipping is

a function of the assistance level (Stryker 1979). Indeed, a Maritime Administration publication, Maritime Subsidies 1978, published in December 1978, detailed the maritime assistance programme of 58 different nations. The principal forms of direct aid offered to the merchant fleets of these nations were identified as:

- Operating subsidies for ships
- Subsidies applied to ship construction
- Trade in allowances for ships
- Low interest loans
- Subsidies on payments of interest on loans
- Government guarantees of loans to shipowners
- Accelerated depreciation of assets for purposes of taxation
- Tax free reserve funds
- Duty free imports of materials needed for ship construction
- Cargo preference schemes
- Restrictions on foreign-flag shipping in domestic trade (cabotage protection)
- Maritime research programs.

Not all of the above were used by any individual nation and no standardised pattern seemed to exist. Each nation appeared to adopt whatever methods seemed most likely to ensure the survival of their merchant fleets.

Assistance is not confined to countries of a particular type, but covers the developed nations, the less developed nations, and the communist nations. For example, a further Maritime Administration Study - The Maritime Aids of the Six Major Maritime Nations (1977), showed that the quantifiable direct assistance provided by these six countries, for the maritime industry, including grants, credit and financing help, and tax allowances (but excluding cargo reservation), averaged about \$1.6B per year for the period 1971-75. Subsidised loans for the acquisition of new vessels are generally available in the OECD countries at 8 1/2% over 8 1/2 years. This position certainly applies in the UK, and the rules on capital allowances have until recently provided further substantial assistance to the industry in Britain. Japanese shipping companies have typically been able to obtain 65-75% of the cost of vessels in the form of loan finance, with interest differential subsidies being available. Export credits for vessels constructed in Japanese yards are usually available. For developing countries very

heavily subsidised finance appears to be available to finance orders for ships to be built in Japan, e.g. in 1979 Pakistan was granted a Y 15B loan in return for a six ship order. The terms included a 10 year grace period and repayment in 30 years at an annual rate of 3.5%. In Norway, a reduction of approximately 26% in construction cost was introduced from 1979, together with 80% loans over 12 years, at 8% and with a grace period of three years. In the United States a subsidy has been available to assist with the construction of vessels in US yards. This subsidy, known as Construction Differential Subsidy (CDS), was paid on US flag ships for use in foreign commerce, and reflected the difference between the domestic cost of a proposed vessel and the estimated foreign cost of the same vessel, up to a limit of 50% of the total cost. Between 1970 and 1978 CDS contracts were made to aid in the construction of 94 new vessels. Subsidised Shipping orders totalled approximately \$5B with subsidy being \$1.9B. A further 49 vessels were reconstructed or reconditioned. (Source Marine Engineering log - June 1983). No funds are currently being made available for CDS, so it may be a thing of the past. However, Charles Hiltzheimer, when Chairman and Chief Executive Officer of Sea-Land Industries, estimated that CDS would have to be raised from 50% to at least 67% and then on to as much as 75% in the near future, if the cost of vessels built in US yards were to be equivalent to that of vessels built in foreign yards (see Beargle 1983). Such a statement implies that the political pressures for further CDS funding will be considerable, since without such funding the future for American Shipyards looks bleak. Evidence of this can be seen from various press reports (e.g. Morison 1984b). Operating Differential Subsidy (ODS) is also obtainable in the United States. This is a form of direct financial assistance to help US flag operators compete effectively with foreign shipping lines. It is designed to offset the competitive advantages enjoyed by lower cost foreign companies. A third form of support provided in the United States is that of Title XI financing guarantees. Under this system the Maritime Administration can guarantee debt financing up to 87 1/2% of the total actual cost of construction of a vessel. Shipowners are thus able to obtain long term debt finance (over periods of up to 25 years) at rates which are slightly above US Treasury issues.

Assistance is also available in the less developed countries, even though relatively low labour costs give such countries a significant competitive advantage. In many cases assistance is given with the cost of building vessels, a point which will be returned to in the next section.

As was made clear in the previous section considerable support also exists for the industry in

the Communist nations. Such aid is difficult to quantify, given the nature of the communist economic system, but certainly includes effective subsidies on labour, fuel, insurance, depreciation and interest.

A system with large elements of aid and subsidy clearly distorts market prices somewhat. Whether this is sensible or not is not an issue which will be addressed here. The fact remains that such aids exist. Companies thus need to be fully aware of all the subsidies and other assistance available, and to take advantage of them, if they are to compete with other efficient (i.e. low cost) operators. Even then, they may not be able to compete with efficient companies operating under different flags. Shipping companies performance, and hence their investment, has the potential to be significantly affected by governmental policy on aids and subsidies. To most shipping companies such a statement is self evident. This is unfortunately not true of most Governments.

The Shipbuilding Industry

Shipping and Shipbuilding are different, but related industries. Shipping is to do with the provision of waterborne transport services. Shipbuilding is about the provision of ships for these services. Shipping profitability is clearly influenced by the relative supply of vessels and the demand for services and in an efficient market the demand for ships would depend on this balance. By comparison, the shipbuilding industry would supply ships as long as "normal" profits could be earned from building them.

In practice a number of distortions exist, which prevent an efficient balance being achieved. The reasons for these are broadly as follows:

- (i) Shipbuilders are not concerned with the profitability of the shipping markets per se, but with the sales of ships. They are not directly concerned with the use to which the ships they build are put, or with the overall number of ships.
- (ii) A shipyard represents a substantial source of employment, since shipbuilding is a labour intensive industry. In many areas a long tradition of shipbuilding has led to the shipyard being one of, if not the most, important sources of employment in the area. In many of these areas other employment has typically been based on the heavy industries, many of which are now in decline. In the UK such areas include Tyneside, Clydeside and Belfast. Inevitably in such areas the social and political pressures to maintain employment wherever possible are enormous. Given the nature of shipbuilding it has thus become a politically sensitive industry. Shipbuilding is thus often actively supported and

assisted by Governments, even where no such support is forthcoming for the shipping industry.

(iii) A further political aspect is that some governments consider it necessary to ensure that domestic shipbuilding capacity does not fall below a certain level, usually for reasons of long term security and independence.

Examples of the above can be found in numbers of areas in the world. For example, the Journal of Commerce (Porter 1983) reported that between 1979 and 1983 British Shipbuilders received nearly £750 million of government support, but was still unable to compete with the hugely subsidized shipbuilding industries of Third World Countries. The report went on to say that Korean yards were currently quoting prices for ships that would cover only the material costs in European yards. A week after this original report (Barnard 1983) the paper quoted Sir Robert Atkinson, then Chairman of British Shipbuilders, who had coupled a scathing attack on price-cutting by Japanese and South Korean yards with a stark warning that without State aid the UK Shipbuilding industry will wither away. He stated that some fundamental decisions would have to be taken by the UK Government if merchant shipbuilding and marine engineering were to be sustained in the UK. The net effect of pressures of this type in the system is a shipbuilding capacity which is greater than is really needed to satisfy the needs of the shipping industry. The effect of this on demand/supply relationships can be considerable. This will be reconsidered in a later section.

Issues of National Security

Underlying many of the actions of governments are broad concerns related to national security, in both military and economic terms. Even where such concerns have not been translated into effective action, political lobbies of potential significance remain. For example, William Neuhauser (1980), Executive Secretary of the National Maritime Council, has argued that a strong U.S. Merchant Marine is essential to US national Security. He saw this as a critical component of deterrence. The Soviet Union must know that the U.S. is both willing and able to send men and material to a potential war zone in quantities sufficient to deprive it of gains through military aggression. He went on to point out the deficiencies of the US Merchant Marine in terms of its supportive capabilities, and to argue for a new comprehensive maritime policy for the United States.

Other observers have expressed concerns in relation to economic security, pointing out that a certain size merchant marine is essential if a nation is not to have the potential of being held hostage

over essential imports. For example Van Lier (1979) pointed out that only 4% of US Import and export tonnage was carried by American flag vessels. He compared this with figures of 50% for Russia, 40% for Japan, and 30-40% for most West European nations. He further pointed out that the US was self sufficient in only 3 of 71 basic materials essential to US national defence, and that the US had become virtually 100% dependent upon foreign flag ships for delivery of these goods. Neuhauser himself had raised similar points in 1979, stating that,

"If new trade and maritime policies are not promptly forthcoming we will see more US Liner company bankruptcies - and we will see more American ship yards go under. The end result could well be the Russians and others completely dominating our commercial sea lanes, perhaps to the point where trade terms are dictated to us, much as the oil rich OPEC nations are doing right now."

In Britain the security issues were probably at their most apparent in recent years, at the time of the Falklands crisis, when a number of British flag ships were requisitioned. Whether such an exercise could be mounted even only a few years later is now debatable, and must surely be a concern for government.

Security issues arise periodically, and will be treated differently according to the political views of governments in power, and to the political conditions existing at the time. There is seldom any real consistency of policy. Nonetheless, issues of this type can have a bearing on the support for, and hence the nature of the shipbuilding and the shipping industries of a nation.

3. Costs and Financing

3.1 The nature of shipping costs

It has already been pointed out that shipping is a highly capital intensive industry, with current costs of new vessels and related facilities being extremely high. Frankel (1982) has estimated that the replacement cost of the world's shipping fleet is estimated to be well in excess of \$280B (in 1980 terms), and that total annual investment in newbuildings would grow to \$25B per year by 1990. Interestingly, he goes on to point out the increased importance of financing costs, which together with fuel expenditures often make up approximately 60 per cent of total costs. This puts considerable emphasis on the identification of an appropriate investment financing strategy, making this aspect of the

decision fairly crucial in terms of the success of the investment. Financing costs may well be considerably influenced by the choice of flag and country of ownership, since these influence such things as the eligibility for subsidies, credit terms, tax benefits, etc. Operating costs will also be heavily dependent upon the choice of flag. For example US flag ships are governed by various rules and agreements which effectively result in manning costs being very high in relation to those of other flags. The cost of manning a flag of convenience ship is thus very much lower. Indeed, the cost of manning a flag of convenience ship is also considerably lower than that of a UK ship. A United Nations study on comparative labour costs, published in 1979, indicated that annual manning costs in 1975 for a typical 32 man tanker crew varied from \$328,000 for a developing country, \$380,000 for a Greek crew, \$482,000 for a British crew, \$850,000 for a Norwegian crew, to \$1,750,000 for a US crew.

Costs of running a shipping company can be broken down into four areas.

- (i) ship and crew
- (ii) terminal facilities
- (iii) supervision
- (iv) administration

The costs relating to the first of these represent by far the largest proportion of total cost, although the cost of terminal facilities may be significant for a liner company. Principal costs associated with the ship include:

- (i) financing costs (depreciation and interest)
- (ii) crew costs
- (iii) insurance
- (iv) fuel/lubricating oil
- (v) repair and maintenance
- (vi) supplies
- (vii) cargo handling costs
- (viii) brokerage

The first three are very largely fixed, representing a significant proportion of total costs. This poses problems in tight market conditions since variable costs can be covered at rates which pose serious problems of long term profitability and survival. In the short term it is clearly beneficial to keep operations going as long as variable costs are covered and a contribution to fixed costs is being

made. In the long run fixed costs must be covered and profits made if further equity capital is to be attracted into the industry.

One considerable advantage of the above cost structure, which was found to be of significance in this study, was that shipping companies were found to have considerable confidence in their estimates of the costs of operating ships. The two most critical variables appear to be interest rates and oil prices.

One further point worth noting is that in shipping economies of scale can be very significant. Manning costs certainly do not increase in proportion to increases in ship capacity. Larger ships therefore offer significant potential reductions in costs per ton mile, or cost per TEU mile, provided that the larger vessels can be fairly fully utilised. Larger ships, running on more fuel efficient engines, with smaller crews, could change the cost structure of the industry significantly.

3.2 Methods of acquiring and financing vessels

Placing an order with a shipyard is probably the most usual form of acquiring a new ship. Such an acquisition can be financed in one of or a combination of the following ways.

- (i) The owner's own funds. This has become far less significant in recent years, given the enormous cost of acquiring new ships. Even so it has been estimated that between 1970 and 1978 the international shipping community found some US\$ 24,000M from its own equity sources. (Oceanic Finance Corporation 1979) The use of the owners own funds ensures that control remains with the owners, and that the risks associated with debt finance are avoided.
- (ii) Shipyard finance. Typically some 70-80% of the cost of a vessel can be financed by a loan from the shipyard building the vessel, often at a subsidised rate, for periods of between 7 and 15 years. Standard OECD terms, which are thus available for most western world companies, provide for 80% finance, at 8 1/2% per annum interest, over 8 1/2 years. It is sometimes possible to obtain higher proportions, over longer periods, with various concessions being granted with regard to grace periods before repayment commences. Examples have been found of loans for 100% of cost, over 12 years, at 7% p.a. interest, with grace periods of two years. Other loans covering 90% of the cost have been available over 15 years. The typical loan period however, is probably of the order of 8-10 years.
- (iii) Leasing. This method increased in importance in the 1970's, but still represents a relatively

small proportion of total financing. It appears to be only available for blue chip companies. Typically it provides 100% finance over 12-15 years. Leasing is seen by many owners as reducing flexibility, and its advantages depend upon the tax position of the company concerned.

(iv) Commercial bank credit. Given the general availability of relatively cheap yard credit, it is unusual to find commercial banks being asked to finance new ships in total. However, many companies find themselves unable to finance even the 20-30% needed if they use shipyard credit. Commercial banks are thus used to "top-up" such loans. Interest on the "top-up" portion is at commercial rates, and is dependent on the calibre of the borrower and the collateral provided.

(v) In the USA Title XI finance can be used for ship acquisition. Title XI financing takes the form of a government guaranteed corporate bond, usually for a period of 20-25 years. The bond will usually cover up to 87 1/2% of the cost of acquisition, and the rate of interest will typically be marginally higher than on government bonds. The bonds are tied to specific vessels. In assessing applications for Title XI support, the Maritime Administration (MARAD) go through a number of steps to assess the economic feasibility of the proposal, and will only lend if it is satisfied. It thus acts in a similar way to a commercial bank.

Second hand vessels are almost entirely financed from owners equity and commercial bank credit. An efficient sale and purchase market operates through sale and purchase brokers. Banks will typically require a range of collateral to back up a ship loan, covering such things as a first or second mortgage, assignments of earnings, guarantees or covenants, etc.

Over the next decade it is likely that yard credit, commercial bank loans, and Title XI finance (USA only) will be the major sources of funds for new vessels. New equity is likely to be limited, for the following reasons:

- (i) Only good Corporations are likely to be able to raise capital on the stock markets, and they are unlikely to put much of their own money into a depressed market such as shipping.
- (ii) Serious limits exist to the wealth of owners of private companies.
- (iii) Retained earnings are unlikely to be high given the current market situation.

4. The Current Commercial Environment in Shipping

4.1 Supply/Demand Relationships

Section 2.1 indicated that a close relationship can be expected between the demand for shipping services, and GNP. As GNP changes so does the demand for shipping services. The last few years (1980 on) have seen a fairly serious recession in much of the developed world, with a consequent reduction in the demand for shipping services. Some improvements have occurred since 1983, particularly in the United States, but a certain pessimism remains about the world economy generally. By comparison the supply of vessels has not changed as dramatically. A large ship of the type used in international commerce is likely to take some time to design and build. Once built there is no technical reason why a vessel should not operate for a period in excess of 15 years. Some increase in the rate of scrapping has occurred, and ships are being scrapped at much younger ages than was once the case (e.g. supertankers have been scrapped only seven years after completion). Nevertheless, the reduction in the supply of ships which would be needed to achieve equilibrium with demand has simply not occurred. The pressures from the shipbuilding industry remain, and new buildings continue. In some cases, for example, the massive order for container ships placed by United States Lines, new orders will have a significant effect on the supply side figures for certain types of ships. A supply/demand imbalance currently exists, and seems likely to continue for some time in the future.

Figure 2 illustrates the state of the overall shipping market since the beginning of the 1970's. The catastrophic effect of the 1973/4 oil crisis can be seen, as can the effects of the recession of 1980. Major changes in policy with regard to building and scrapping are clearly needed if a significant move towards equilibrium of supply and demand is to be achieved. It is likely to be several years before such an equilibrium is achieved, even if, such policies were to be implemented.

Figure 2 relates to the overall market. Similar concerns exist when the market is disaggregated by type and size. In fact the problem is slightly different in the various sectors with different relationships existing. Table 4 summarises the position in various markets. These figures indicate overcapacity in all areas, of varying degrees, ranging in 1983 from 8% in general cargo ships of 15000 dwt + to 115% for supertankers. Clearly the opportunity for making reasonable profits in the supertanker market is virtually zero, given this kind of relationship.

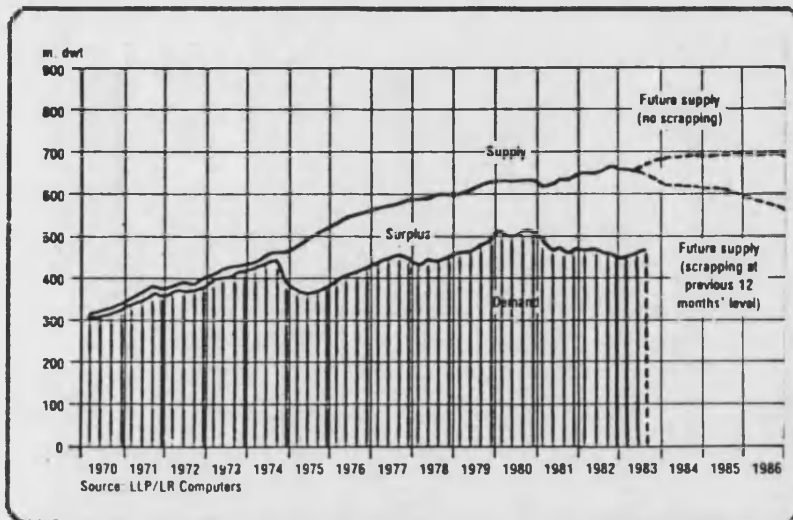


Figure 2. World Merchant Shipping (1970-1984)
Source: Lloyds Shipping Economist - December 1983

The information provided in the original source (Lloyds Shipping Economist - December 1983) includes projections which incorporate known orders, together with assumptions about scrapping. The expected supply figures for the end of 1986 are thus shown in the final column. These figures are based on actual supply in November 1983, plus orders known in September 1983, less scrapping assumed to continue at the same rate as before. Not surprisingly, the expected figures show a substantial reduction in supply for the two larger categories of tanker, presumably through continued scrapping. Even so the figure for supertankers still suggests a major imbalance continuing. Rather more surprisingly, the figures for expected supply for the dry bulk sector show increases, in two cases fairly dramatic increases. Given the already high overcapacity such a move appears surprising, and would suggest that freight rate levels for the bulk sector would continue to be low for some time. The actual figures for November 1985 are included in Table 4, to enable judgements to be made about current supply/demand relationships. Given that interviews were carried out in the period 1982-84, the figures for November 1983 should be seen as providing a context for the decisions discussed.

Similar concerns exist in the liner trades. A number of liner companies have invested in larger, more efficient tonnage. In some cases existing tonnage has been maintained by the companies thus increasing their overall capacity. In other cases some existing tonnage has been sold off, a policy which in turn may introduce further problems. For example, Lloyds Shipping Economist have pointed out that:

"Fears among liner operators that vessels sold on the second-hand market would go to independent or nationally backed companies that could undercut rates on directly competitive trades through lower capital and operating costs appear fully justified." (Slots for Sale, Lloyds Shipping Economist, December 1983)

There is little doubt that the increase in container carrying capacity achieved by recent newbuildings have not been compensated for by equivalent scrappings.

Type of market/size	million dwt						
	November 1983			November 1985			Projections for 1986 supply 1983 figures
	Supply	Demand	Surplus	Supply	Demand	Surplus	
Dry Bulk							
10000 - 39999 dwt	84.7	67.6	25%	92.0	74.3	24%	94.8
40000 - 79999 dwt	59.3	41.9	42%	67.1	50.3	33%	68.9
80000 dwt plus	56.1	41.5	35%	64.0	50.5	27%	56.7
General Cargo							
5000 - 9999 dwt	25.8	23.3	11%	24.4	22.5	8%	25.5
10000 - 14999 dwt	33.6	29.3	15%	29.5	26.6	11%	30.3
15000 dwt plus	46.4	43.1	8%	50.4	47.7	6%	49.7
Tankers							
10000 - 39999 dwt	36.9	32.0	15%	34.9	29.8	17%	36.0
40000 - 149999 dwt	100.9	74.5	35%	90.2	72.6	24%	86.0
150000 dwt plus	176.8	82.3	115%	143.1	61.1	134%	136.9

Table 4. Supply demand relationships for different sectors/sizes of ship
Source: Lloyds Shipping Economist - December 1983/5.

Overcapacity is clearly a major problem in shipping. Indeed, it has been held to be at the root of the shipping industry's problems (see for example Daily Commercial News - January 27 1984). The various political influences referred to earlier have played a major role in reaching this situation. Nevertheless, there are large elements of "fashion following" in the industry, which undoubtedly contribute towards the problem. For example, consider the substantial increases which have occurred in the number of 40,000 dwt bulk carriers since 1980, in spite of the overall supply/demand figures.

The implications for freight rates and corporate profitability of a situation of considerable overcapacity are serious. Douglas (1984) pointed out that most ocean transportation was being provided at freight rates which were well below full cost, often covering little more than fuel and labour expenses. This has serious long term implications for the industry in terms of the incentive to

re-invest, or even to remain in the industry. Douglas argues that in a time of considerable surplus capacity, even cost reduction schemes are unlikely to lead to increased profits, since the free market will drive rates down to close to running cost level. Without such schemes, however, shipowners will not be able to compete.

4.2 Forecasting Problems and Industry Volatility

It has already been pointed out that forecasting the demand for shipping is difficult, particularly when overall demand is disaggregated by type and route. Yet freight rates will largely depend upon the relationship between supply and demand. Given that supply is relatively fixed in the short run, and demand is difficult to forecast, it is not surprising that freight rates are extremely volatile. Given also the overcapacity which exists it is also not surprising to find that they are very low, in many cases covering variable costs but not fixed costs. The price of ships is in turn largely influenced by expected profitability, either through use or subsequent disposal. Given that profitability is dependent on freight rates and disposal values the price of second hand ships fluctuates somewhat, with scrap value likely to set a floor to the price.

The industry is thus in a fairly volatile state, and is subject to considerable short term fluctuations. At present (1987) rates are not high. Forecasting future returns is thus difficult. Figures 3 and 4 provide an indication of the kind of changes in freight rates that have occurred in recent years.

Figures 5 and 6 provide equivalent figures for second hand price trends over the same period. The same broad trends are apparent in both figures. Even the newbuilding price trends (see figure 7) indicate a response to the freight market.

Variations in rates are not uncommon. However, until recently the variations followed a reasonably cyclical pattern. Rather more doubts now exist as to whether this cyclicity will continue, certainly with the same regularity. More recent observers (for example, Hargreaves 1983), have been predicting longer periods of recession between short upturns in the market. Whether such predictions will be correct remains to be seen.

Other variables causing considerable problems with regard to forecasting are interest rates and exchange rates. Interest rates, as well as being volatile, have also been very high, giving higher than

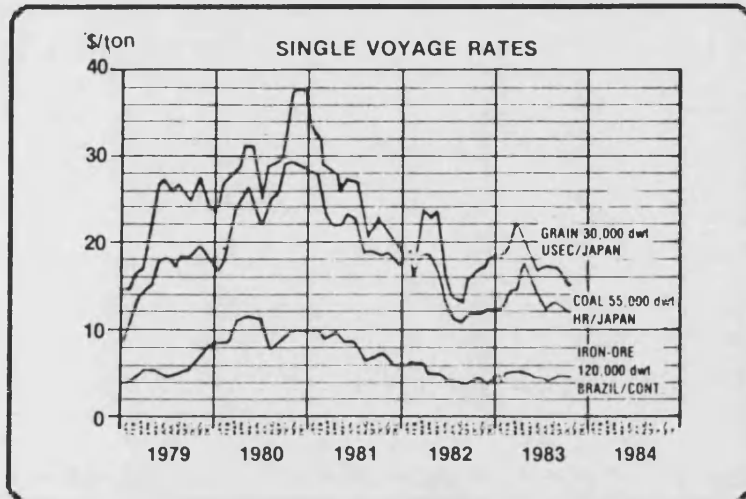


Figure 3. Single voyage rates 1979 - 1984

Source: Lloyds Shipping Economist - December 1983

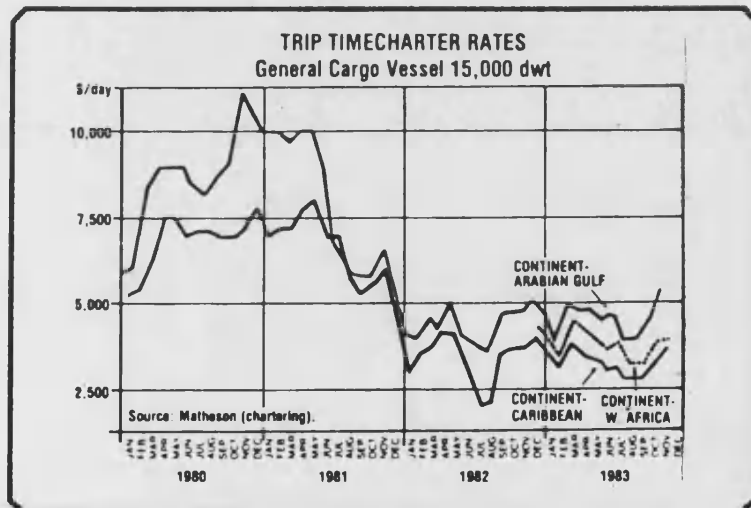


Figure 4. Trip timecharter rates 1980 - 1983

Source: Lloyds Shipping Economist - December 1983

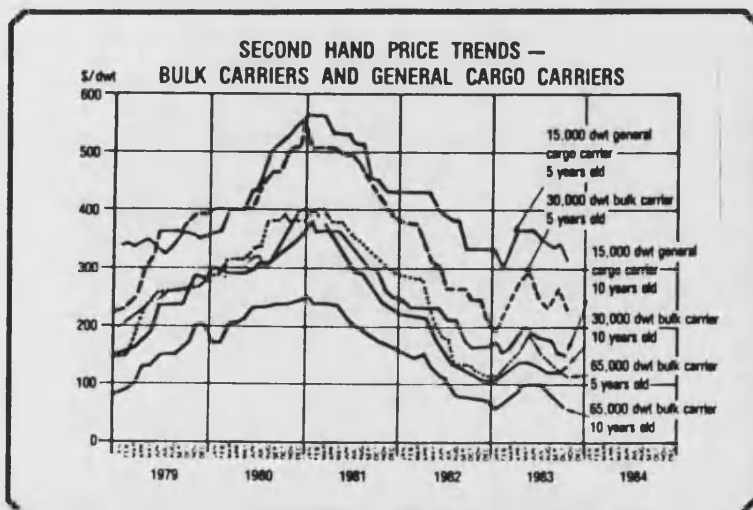


Figure 5. Second hand price trends - Bulk carriers and general cargo carriers.

Source: Lloyds Shipping Economist - December 1983

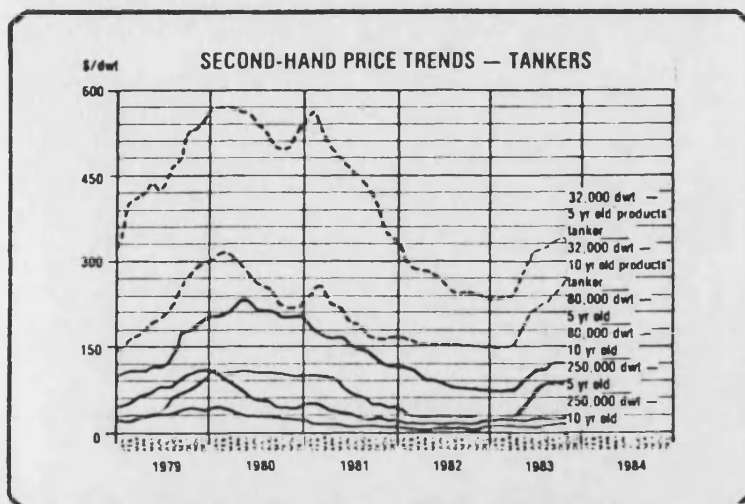


Figure 6. Second Hand Price Trends — Tankers 1979 - 1983
Source Lloyds Shipping Economist - December 1983

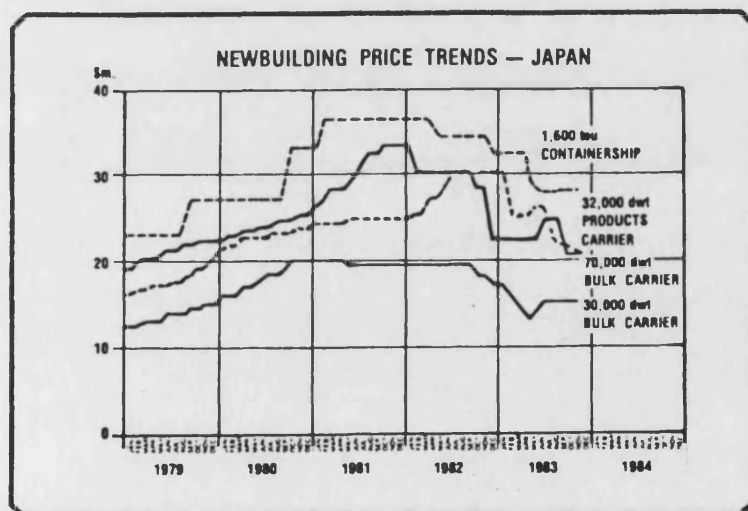


Figure 7. Newbuilding Price Trends — Japan 1979 - 1983
Source Lloyds Shipping Economist - December 1983

usual real rates of return to lenders, but posing problems for an industry with large borrowings. Exchange rate fluctuations have caused headaches for shipping companies because of their effect on trade flows, frequently causing substantial trade imbalances (e.g. Europe/USA). Such imbalances, apart from being difficult to forecast, pose serious problems in terms of operating efficiency. In some cases in recent years containers have been filled with scrap metal for the Eastbound Atlantic run, simply to get containers back where they are needed for traditional liner cargo. Fluctuating exchange rates have also introduced other problems for shipping companies. Changes in rates of exchange between the domestic currency and the US dollar (the generally accepted currency for shipping transactions) may cause considerable differences in effective costs, and therefore profitability. Loans taken out in other than the domestic currency carry with them the risk of potential exchange rate gains

or losses as exchange rates change.

4.3 Other factors of potential impact on shipping companies

The political factors outlined in section 2 of this chapter all have the potential to affect company profitability. Perhaps of most significance are

- (i) impacts on potential cargo of such things as cargo preference agreements, and increases in the fleets of the eastern bloc countries and those of the less developed countries,
- (ii) the potential impact on costs of various forms of subsidy and of registering under a flag of convenience.

Commercial trends or developments not already identified include the use of speculative funds to acquire vessels, particularly tankers, in the hope of achieving capital profits in the event of a rise in the value of the vessel. Pressures for tighter cost control and cost reductions are also increasing. In certain cases, particularly the liner trades, these pressures are likely to lead to larger ships, leading to economies of scale, greater use of fuel efficient engines (typically slow speed diesels), and greater parity of manning costs (see for example Hiltzheimer 1982). The search for parity of manning costs may lead to increased "flagging out" from certain national flags (e.g. USA and UK), or to reduced crews, often with more technologically advanced and automated equipment.

Technological issues of significance centre on three main areas, energy conservation, ship design, and modern communications methods. Energy conservation relates to the use of energy efficient hulls, effective maintenance, and efficient energy conversion levels. Changes in ship design are of two types, one concerning the efficiency of the vessels, the other concerning the efficiency and/or flexibility of cargo handling and transportation. Changes in communication methods are likely to lead to significant changes in decision making, and in the commercial responsibilities of masters.

The political influences referred to in section 2 make it likely that yard credit will remain at similar levels to those currently available, with subsidised interest being common. Title XI finance clearly represents an efficient means of financing American vessels, and is likely to be used by American companies for as long as possible. Commercial bank credit will probably remain a significant source of financing for purchasers of second hand vessels, and/or top-ups for companies in certain nations. Leasing is likely to be confined to the best companies, partly because of availability, partly

because of borrowers preferences.

5. The Shipping Industry in the UK and the USA

5.1 The United Kingdom

The UK has a long tradition in shipping, and has historically been a major maritime nation. UK shipping has traditionally been a significant contributor to UK invisible earnings. In 1980 net earnings from UK owned ships were in excess of £1,000 millions, a figure which was approximately half of the net invisible earnings of the City of London. In recent years however, the shipping industry in the UK has suffered a decline, from a high point (in terms of gross registered tonnage) in 1976, of just over 30 millions grt, to just above 20 millions grt by 1981. Capital expenditure on ships for the UK fleet has slowly declined in money terms over the same period, with a more significant decline being evident when the figures are calculated in real terms. In spite of this, investment in 1980 still amounted to more than £400 millions, and in 1981 to more than £250 millions. (Source British Shipping Statistics 1981 Tables 2.8, 5.5)

Perhaps the main reason for the decline in the UK industry in recent years is the relative cost advantage of flags of convenience and certain national flag fleets. It is difficult to know whether there has been a significant decline in UK beneficially owned shipping, but many British companies now operate under the Liberian flag, or other flags of convenience.

British companies can obtain finance for new ships under standard OECD terms. Taxation rules have, until recently, been particularly favourable in the UK, with free depreciation effectively being allowed on new ships. The recent changes from this position will pose further problems for the industry. Shipbuilding costs in the UK are relatively high, but there are no restrictions on registering foreign built ships under the British flag.

The situation facing British shipowners is not untypical of that facing shipowners in most developed nations. The concerns are probably greater than in some countries, because of the relative importance in the past of the merchant marine, in terms of invisible earnings, and the very clear decline over the last ten years. Nevertheless an analysis of behaviour in British shipping companies is

likely to give similar results to those that would be achieved in most developed nations.

5.2 The United States of America

The shipping environment and associated markets for shipping companies in the USA is effectively split into two quite different sectors. The Merchant Marine Act 1920, the Jones Act, states that cargo can be transported from one place to another in the United States only on vessels built and registered in the United States. US domestic trades are thus effectively limited to US flag ships, built in the United States. Protection of this sector of the industry means that low cost foreign operators cannot undercut domestic companies. The significant cost differentials which exist in both building and operating US vessels, as compared with foreign vessels, are of no importance for Jones Act trades. All participants in domestic trades compete on the basis of domestic costs. Given the very high costs of new buildings it is not surprising that a significant part of the domestic fleet is extremely old, since the competitive forces are not as great as in other markets.

The foreign, or international market, has no such restrictions. US shipowners competing in the international markets are subject to most of the rigours of international competition, subject to the reservations given below. US companies involved in international trade may operate under the US flag, or under a flag of convenience. US flag ships have to follow certain rules and regulations, not least that ships normally have to be built in the USA and be manned by US crews. (In recent years the rule about ships needing to be built in US yards has been temporarily relaxed, provided that such ships are only used on foreign trade, and not Jones Act trades.) American flag ships involved in foreign trade may obtain certain advantages, through such things as:

- (i) construction subsidies (construction differential subsidy - CDS) - though funds have not been available for this in recent years.
- (ii) operating subsidies (operating differential subsidy - ODS), which may be available on certain routes.
- (iii) availability of Title XI finance.
- (iv) cargo preference contracts.

Details of the first three can be found on pages 24/25 of this chapter. Cargo preference contracts relate to the carrying of government (or government sponsored) cargoes. In spite of these advantages

US flag rules typically put most companies at a serious cost disadvantage in relation to foreign competition, particularly with regard to building costs and manning costs.

Not surprisingly, therefore, the US flag share of US oceanborne foreign trade has declined significantly in post war years, from 42.5% of total tonnage in 1950, 20.7% in 1956 to 4.5% in 1981. In value terms the corresponding figures for 1956 and 1981 were 33.8% and 15.5% respectively. (Source Shear 1983). The liner trades have held up best (26% of total US oceanborne liner tonnage in 1981), partly because of the subsidies, partly because certain US liner companies are in the forefront with regard to efficient and advanced container vessels. Indeed the US flag "foreign" fleet can be seen to consist principally of two types of vessels:

- (i) highly efficient/high technology/expensive vessels which can compete internationally in spite of labour cost disadvantages.
- (ii) other ships which operate at significant cost disadvantages, but which survive through subsidies and cargo preference deals.

In practice, the US flag fleet represents a relatively small part of the US beneficially owned fleet. Many US companies operate vessels under other flags (particularly Liberia and Panama). While forfeiting the advantages identified above, such companies avoid the cost disadvantages of the US flag. To all intents and purposes such a company faces the same problems as any other company in the world operating under the same flag of convenience (with the possible exception of tax if domiciled in the USA). Such a company is thus highly unlikely to have its ships built in the USA, or to employ American crews.

In any analysis of "American" shipping, the above differences need to be clearly recognised.

Chapter 3

Review of the Literature on Finance

1. Introduction

The purpose of this chapter and the next is to review the literature relating to this particular study, and to identify the approaches to investment and financing decisions which are to be found therein. Given that one of the major aims of this thesis was an empirical assessment of the theory of finance, this theory, and its associated criticisms, are reviewed first, and this review provides the basis of this current chapter. As the thesis developed it became clear that in practice links existed between the theory of finance and other theories, particularly those relating to corporate strategy and planning. A review of this area is thus provided in chapter 4. In fact the areas outlined in chapters 3 and 4 have tended to develop relatively independently, almost as separate and unrelated areas of study, with rather different underlying disciplines or themes. For example, finance theory is well grounded in economic theory. By comparison the theories relating to corporate strategy, while including financial dimensions, tend to have their roots more in behavioural theories and management studies. In recent years a limited amount of overlapping of ideas has started to take place. In practice decision makers in business have to balance the various theories and practices found. Chapters 3 and 4, by setting out a review of the available approaches, provides a framework for achieving the aims of the thesis.

2. Review of the Literature on Finance

2.1 The Concept of Net Present Value and the choice of the discount rate

A considerable volume of literature exists in the finance area, built up principally over the last thirty years. Some agreement has been reached on theoretical ideas. In some areas conflict remains. In

order to keep this review down to manageable proportions, the essential theories set out below will be based on one of the better modern text books, namely "Principles of Corporate Finance", by Richard Brealey and Stewart Myers (1981). Where it is necessary to supplement this with more specific references, this will be done.

Fundamental to the theory of investment decisions is the concept of net present value (NPV). The use of NPV is based upon an implicit objective of shareholder wealth maximisation. In practice it might be argued that a variety of other objectives could or should be appropriate. For example, as long ago as 1963 Cyert and March raised questions about organisational goals, and emphasised goals in relation to production, inventory, sales and market share, as well as profits. The idea of organisation slack was also introduced, as was Williamson's Managerial Discretion Model. Baumol (1961) has developed a model assuming sales maximisation as an objective, with a profit constraint if required. Simon (1955:1957) has argued that in many cases managers are satisfied to achieve certain limited objectives, rather than to maximise them. Such firms are said to *"satisfice"*. Marris (1964) specifically argued that the difference between *"management"* and *"stockholders"* needs to be recognised, since the existence of a harmony of interests cannot be taken for granted. In short, a large number of alternative objectives and assumptions about behaviour could be set up, based upon perceived wider responsibilities or opportunities. However, finance theory typically argues (albeit often implicitly) that even if management does perceive these wider responsibilities the concept of NPV is still valid, since management must strike a balance between shareholders' interests and those of other parties. NPV is seen as the measure that best describes the profit potential of a proposed investment.

Alternatives to NPV include payback (and discounted payback), average return on investment, internal rate of return and a profitability index. However, little support is found in the literature for these, other than the internal rate of return (IRR). This is principally because IRR is a discounting method, which will, in most cases, lead to exactly the same decision as the use of NPV. However, in certain situations differences might arise, namely mutually exclusive projects, projects with non-conventional cash flows and situations of capital rationing. In all three situations IRR is seen as theoretically inferior. However, whether such situations are of much practical importance is a different issue, and one which can be addressed in this study, at least with regard to shipping.

Certainly the majority of writers appear to favour the use of the NPV rule over all others. For example, Brealey and Myers summarised their view as follows:

"If we are going to the expense of collecting forecasts, we might as well use them properly. Ad hoc criteria should therefore have no role in our firm's decisions, and the net present value rule should be employed in preference to other techniques using discounted cash flows." (P78)

A smaller number of writers have argued the merits of the IRR rule in fairly strong terms. Probably the most well known of these are Merrett and Sykes (1963). While recognising that the IRR method can be associated with certain technical difficulties, they nevertheless consider that for most simple capital budgeting decisions the yield method is both technically and practically superior to net present value. They give three main reasons for this conclusion.

"The first is that yield is a more useful measure of profitability when we are endeavouring to assess the return offered for risk bearing."

"Second, the yield method, despite its being in some respects the more complicated is, in our experience, more easily understood and accepted by businessmen than the method of net present value....."

"Finally, the yield method has the advantage of obviating needless dispute about a firm's cost of capital." (P123/4)

In the final analysis the weight of theoretical opinion remains firmly behind the NPV rule, but significant problems with the IRR only remain for projects with non-conventional cash flows and in situations of capital rationing. If neither of these two problems exist the arguments in favour of the NPV rule, as compared with the IRR rule, are far less convincing.

The use of the NPV rule requires the identification of an appropriate discount rate, known variously as the hurdle rate, the opportunity cost of capital, or the cost of capital. (The identification of a hurdle rate is also clearly needed if the yield method is to be followed.) Various theories have been put forward for estimating this particular rate, and two schools of thought currently exist, namely the cost of capital concept, and modifications of the Capital Asset Pricing Model (CAPM) for use in capital budgeting.

Cost of Capital may be defined as the rate that must be earned in order to achieve the rate of return required by the firm's investors. In determining this rate each type of capital, i.e. both debt and equity, should be weighted (using market weights) and incorporated into the calculation. It perhaps needs to be emphasised that the aim is to calculate the expected required rate of the firm's investors. Current required rates, when set in efficient markets, represent probably the best guide possible to those rates, provided that new investments are of essentially the same risk as existing investments.

The calculation of a weighted average cost of capital based on current rates (and therefore on current market values) thus provides an extremely good estimate of expected required rates for new investments in the same risk category. It will, however, only be appropriate if:

- (i) The corporation's financial structure (i.e. relationship between debt and equity) is relatively stable, and future financing patterns will follow this same pattern, at least in broad terms, and
- (ii) The riskiness of a project being evaluated is similar to that of the corporation's existing assets.

The weighted average cost of capital will not represent an appropriate discount rate if any of the above conditions do not exist. Problems typically arise where corporations finance new projects in very different ways to those currently being used, or where the risk associated with new projects is different to that currently relating to the corporation's activities as a whole. In practice different types of projects carry with them different types of risk, and the use of a weighted average cost would not differentiate adequately between projects of fundamentally different risk categories. Under such circumstances the basic model needs to be modified. (See for example the model developed by Martin, Petty, Keown and Scott (1979 : P406).

The Capital Asset Pricing Model (CAPM) The opportunity cost of capital or required rate of return is seen as having two constituent parts, namely a risk-free rate, and a risk premium. The risk-free rate is generally considered to be the rate paid on government securities. The risk premium will depend on the level of risk associated with a particular project or investment. The risk premium which is associated with an individual security can be (theoretically) derived by reference to the Capital Asset Pricing Model (CAPM). Broadly the CAPM states that in well-functioning capital markets the expected risk premium on each investment is proportional to its beta. Investments with high betas are more risky than those with low betas.

The CAPM can be applied to capital budgeting, to provide a basis for adjusting for the risk associated with different capital projects. If the beta of a corporation is known, an approximate expected rate of return can be calculated, and used as a discount rate. Such a calculation, even if it is only approximate, will still enable broad differentiation between companies in different risk categories. However, as with the weighted average cost of capital, the resulting figure would not be appropriate if new projects are more or less risky than a company's existing business. Each project should be discounted at a rate reflecting the risk associated with that particular project. For example, the beta of a firm specialising in projects of the type being proposed by another firm could provide a guide to an

appropriate project beta.

In essence the CAPM implies that projects should be accepted which offer a rate of return which compensates for the project's beta. Such a view is strikingly different to the weighted average cost of capital rule, when not adjusted for differing risk associated with new projects. It implies that projects in a certain risk category should be discounted at a particular rate, irrespective of the company undertaking the project. An investment in Treasury Bills ought not to be considered more risky when entered into by a small company than a large company, since the "project" risk is the same for either. Similarly, a high risk project ought not to be accepted by a large firm, as opposed to a small firm, simply because it has a lower current average cost of capital. The problem is therefore the calculation of the project beta.

The use of borrowed funds will have a considerable effect on betas. The shareholders of a levered firm will have additional financial risk, as compared with those of an unlevered firm. The net effect is that financial leverage will increase the beta of the equity. Using similar logic, it should be clear that operating leverage – the commitment to fixed production charges – should also increase the beta of a project. Both financial and operating leverage are of considerable importance in the shipping industry.

In practice beta is difficult to measure for individual firms, but greater accuracy can be obtained by looking at an average of similar companies. However, betas vary according to borrowing policy, and they change over time. In arriving at an estimate therefore a financial manager will need to combine a sound understanding of the theory with good judgement. Guidance can be obtained from recent behaviour of share price in relation to market movements, and past trends in company and related industry betas.

In recent years a number of organisations have started to provide beta forecasts for a large number of company shares. However, these forecasts are not without problems of their own. Harrington (1983) found that the betas forecast varied considerably; that the larger the horizon and the larger the portfolio, the better the forecast accuracy of any beta; and that all the methods tested left the possibility for over- and under-estimations of troubling magnitudes. Levy (1984) also highlighted the differences in betas caused by the use of different time horizons, and noted significant differences in the behaviour of betas for aggressive and defensive stocks as the time horizon was lengthened. A further problem with CAPM is that recent empirical evidence has shown that most of the commonly used market indexes are not optimised portfolios. Under such conditions CAPM does not provide a

reliable indicator of expected return (see Roll and Ross 1984). Other writers (e.g. Reinganum 1981, Levis 1985) have identified the fact that abnormal returns can be obtained from portfolios of small firms. Reinganum concluded from his study that:

"the simple one-period CAPM is an inadequate representation of capital market equilibrium. Alternative models of capital market equilibrium should be seriously considered and tested." (P56)

Perhaps the best developed "alternative" to CAPM is Arbitrage Pricing Theory (APT), developed by Ross (1976), which asserts that an asset's riskiness, and hence its average long-term return, is directly related to its sensitivities to unanticipated changes in four economic variables, namely, inflation, industrial production, risk premiums, and the slope of the term structure of interest rates. (See Roll and Ross (1984) for an overview of APT.) The essential difference between APT and CAPM is that the former reflects the possibility that there may be more than one systematic risk factor. Indeed, it has been argued (Shanken 1985) that in many discussions of the APT, scholars may have been thinking of a multi-beta interpretation of CAPM. The result is that the two models can lead to different choices with regard to optimal portfolios. It has been suggested (Bower, Bower and Logue 1984) that while the case for APT is certainly not decisive, it better explains variations in returns over time and across assets than does CAPM. Certainly it provides a framework for a more flexible approach to portfolio management which enables managers to better structure the risk exposure of a portfolio. Nevertheless doubts exist about the empirical testability of the model. (Shanken 1982:1985)

Conclusion on the choice of discount rate A number of theoretical solutions to the problem of an appropriate discount rate appear to be reasonably well developed. In general, however, the models relate to portfolios of securities rather than to real assets, and to investors rather than individual corporations. There is little doubt that the models outlined above can provide useful insights into various aspects of risk and return, but their conversion into practical guidance is difficult. Questions remain as to which methods are used in practice to arrive at an appropriate figure, and how such figures are derived.

2.2 Theoretical arguments concerning Capital Structure

In section 2.1 reference was made to the use of a weighted average cost of capital as a discount rate. It was pointed out that such an approach would only be appropriate if (inter alia) the financial

structure of the corporation were relatively stable, and future financing patterns followed this same structure, at least in broad terms. The use of CAPM in discount rate setting was also dependent upon financing methods. Clearly therefore, the rate of discount chosen will be influenced by capital structure/financing methods, and the literature on the capital structure debate is thus reviewed below.

In considering its capital structure, a firm should attempt to find that particular capital structure or financing mix which maximises its overall market value; if such a structure exists. Modigliani and Miller (MM) (1958) have proved that financing decisions cannot change overall market value, in perfect markets, if the investment decisions are taken as given. The total value of a firm is determined by its real assets, not by the type of securities it issues, and their overall mix. The essence of the MM argument is as follows. Leverage increases the expected stream of earnings per share but not the share price. This occurs because the required rate of return is increased as leverage (and hence financial risk) increases, by an amount sufficient to offset the increase in expected earnings. The expected rate of return on the ordinary shares of a levered firm increases in proportion to the debt/equity ratio (expressed in market values). The rate of increase depends on the spread between the return on assets and that on debt.

The MM argument is based upon assumptions of a perfect capital market with information freely and immediately available, no transactions costs, no taxes, and a world where individuals can borrow at the same rate as corporations. These assumptions clearly are not all realistic in practice, and modification to the theory is necessary. The most critical assumption concerning the MM theory is probably that of no taxes. Indeed, MM (1963) subsequently adapted their stance to include taxes. This, they contended, had the effect of reducing the average cost of capital as debt increases, implying an optimal capital structure of 100% debt. Such an approach brings with it further problems. Increases in debt increase the risk of ruin or complete loss through liquidation. The higher the financial leverage the greater the risk of bankruptcy. Hence, in practice, it seems likely that the financial structure chosen will represent a balance between the advantages associated with the tax savings on debt interest, and the potential risk of ruin associated with higher levels of debt.

Once personal taxes are incorporated in the argument, the position becomes even less clear, since the objective ought to be to minimise the present value of all taxes, rather than simply the present value of corporate taxes. Whether such a position is practically achievable is highly dubious, since investors have a whole range of different tax rates. Miller (1977) has developed a model which

attempts to deal with the problem of differences between corporate and personal taxes. In effect he suggests that corporations can bribe investors (by offering higher rates of interest) to acquire more bonds, rather than equity, with equilibrium being reached when the corporate tax saving equals the personal tax loss. Miller's model has several important implications. The first is that there is an optimal debt-equity ratio for corporations as a whole, dependent on tax rates and the funds available to individual investors in the various tax brackets. The second is that there is no such thing as an optimal debt-equity ratio for any single firm. The market is only interested in the total amount of debt and no single firm can influence that. Miller's model was based on the assumption that debt interest would be taxed at a progressive rate, with government debt being tax exempt. Gordon (1982) examined a one-period world with perfectly competitive capital markets, a corporate tax, and a progressive personal tax on debt income. His conclusion was that optimal capital structures could exist for individual firms, with the value of the firm being a convex function of its leverage rate, and the optimal policy for each firm being to maximise leverage. Tax exempt government debt was not found to change either of these two conclusions. Miller's theory was found to hold only where marginal personal tax rates for all persons were both the same and equal to the corporate tax rate. Ross (1985) incorporated uncertainty into the analysis, and also concluded that optimal capital structures could exist for individual firms. De Angelo and Masulis (1980) showed that Miller's theory did not hold if corporate tax shelters existed which were not the result of debts, or if bankruptcy costs were non-trivial. Kneeborn and Flath (1980) have demonstrated empirically that the gains from leverage are positive and that costs of bankruptcy are significantly large.

The points made above make it clear that the capital structure issue is further complicated by considerations of financial distress or bankruptcy. Following the earlier logic, the optimal capital structure should be at 100% debt, if the PV of tax savings is considered. However, higher debt increases the level of risk of bankruptcy (or at least of some kind of financial problem), and the PV of these costs also needs to be incorporated. The costs of financial distress can be broken down into a number of areas, covering both direct and indirect costs of actual bankruptcy, and the costs associated with a financial crisis which nevertheless stops short of bankruptcy. Scott (1976) has presented a multiperiod model of firm valuation with assumptions of possible bankruptcy. If it is assumed that the probability of bankruptcy is zero, his model was formally identical to that proposed by Modigliani and Miller. However once the detrimental effects increased debt can have on a firm were considered, it

became clear that a unique optimal capital structure could exist, below the 100% debt implied by MM.

The conclusion reached by Scott was that:

"The optimal level of debt ... was an increasing function of the liquidation value of the firm's assets, the corporate tax rate, and the size of the firm." (P.50)

The position outlined above is not dissimilar to that taken up in the so called "traditional" approach to capital structure. The arguments for this concentrated on the idea that value was maximised when cost of capital was minimised. Hence the capital structure which minimised the average cost of capital would also maximise company value.

In essence the traditional view is that financial risk is not perceived as increasing significantly until a certain level of debt is reached. Beyond this point, however, increased returns are required by lenders to compensate for the perceived extra risk. Similarly, the cost of equity is not likely to rise as soon as debt is introduced, but will only do so after a certain level of debt is reached. If debt reaches very high proportions, the cost of both equity and debt are expected to rise sharply, such that any advantages of debt are likely to be cancelled out. Given the assumptions of the traditional model, the average cost curve will be U-shaped (some might say saucer shaped). This implies that at the lowest point on this curve the market valuation of the company will be at a maximum, since returns are discounted at the lowest rate. Since maximisation of shareholder wealth is taken to be the organisation's overall objective, the capital structure at this lowest point of cost represents the optimal debt/equity ratio.

Myers (1984b) pointed out that we do not know how firms choose the various securities they issue (and hence their capital structure). He contrasted two ways of thinking about capital structure, as follows:

"1. A static trade-off framework, in which the firm is viewed as setting a target debt-to-value ratio and gradually moving towards it, in much the same way that a firm adjusts dividends to move towards a target payout ratio.

2. An old-fashioned pecking order framework, in which the firm prefers internal to external financing, and debt to equity if it issues securities. In the pure pecking order theory, the firm has no well-defined debt-to-value ratio." (P2)

The first of these is consistent with many of the views set out above. However, Myers goes on to argue that in fact the pecking order framework performs at least as well in explaining financing choices. He suggests (while recognising that the "story" is oversimplified and underqualified) a "modified pecking order" story broadly as follows. Firms have good reasons to avoid issuing common stock to

finance real investment. However they do not wish to pass up positive NPV projects or to issue stock at too low a price. Target dividend payout ratios are thus set which enable normal levels of new equity to be generated internally. Some of the normal investment outlays may be covered by new borrowings, but the firm tries to keep the debt safe, thus avoiding any material costs associated with financial distress, and maintaining reserve borrowing power. Since target payout ratios are "sticky", but investment opportunities fluctuate relative to internal cash flow, the firm will need to raise more funds on occasions. Risky debt will normally be used before common stock. Observed debt-equity ratios will thus reflect the cumulative need for external financing, which in turn will depend on the profitability and growth of the firm.

The overall conclusion on this area is tenuous. The "majority" view appears to suggest that an optimal capital structure exists. Miller's theory does not appear to have been universally accepted, but is disturbing. Brealey and Myers included the question *"How can we explain capital structure?"* in their ten unsolved problems in finance. They concluded:

"The upshot of the matter is that we still don't have an accepted coherent theory of capital structure. It is not for want of argument on the subject" . (P739)

Nor do we know whether managers or companies themselves actually work towards a capital structure, and if so, what their rationale is.

2.3 Interaction of Investment and Financing Decisions

Under the MM1 assumptions set out in the last section, and, indeed, in a number of real world situations, the investment and financing decisions can be treated as independent. However, in some cases these two aspects interact, and adjustments need to be made. The approach usually recommended is to arrive at an adjusted NPV as follows:

$$\begin{array}{lll} \text{Adjusted NPV} & = & \text{base-case NPV} \\ \text{(APV)} & & \text{(i.e. all equity financed} \\ & & \text{project)} \end{array} \quad + \quad \begin{array}{l} \text{NPV of financing decisions} \\ \text{caused by project acceptance} \end{array}$$

In the case of a project financed by a subsidised loan, such as is typically found in shipping, the PV of the interest saving would need to be calculated and added to the base-case NPV. Any tax savings which arise due to increased debt capacity associated with a project should also be incorporated. An alternative to the calculation of an adjusted NPV is to calculate an adjusted cost of capital.

Adjusted present value ideas can be further developed in the context of international projects.

Lessard (1981) has suggested a "divide and conquer" approach to capital budgeting, suggesting that financial contributions to a project's value are recognised separately and explicitly. The model suggested by Lessard involves the separation of the various cash flows, including such things as capital outlay, operating cash flows, contractual cash flows, depreciation tax shields, tax shields due to normal borrowing, financial subsidies etc. The use of such a model, through the separation of the various contributory factors, enables a more effective analysis of projects to be carried out, since the areas subject to the greatest risk can be analysed most rigorously. Adjusted present value represents a useful extension of the basic theory, particularly where the different cash flows identified above are found.

In practice the ideas outlined above appear to be less than generally accepted. For example, Pinches (1982) has questioned the viability of the assumption that the investment and financing decisions can be separated, describing the assumption as "troublesome", and has observed that there is little if any acceptance of the concept of adjusted present value in practice.

2.4 Risk and Uncertainty in Capital Budgeting

Diversification is seen as a means of reducing or eliminating specific risk. However, the advantages of such a process relate to the holding of a portfolio of securities. The arguments for diversification of activities within a corporation are considerably less compelling. Indeed, Brealey and Myers point out that if investors can diversify on their own account they will not pay any extra for the shares of firms which are diversified. Since individuals can often diversify more easily than firms, the implication must be that diversification within a firm will not change the value of that firm, which is the sum of the various component parts. The theory would therefore appear to suggest that diversification is best left to the investors.

However, risk reduction through diversification represents one particular aspect of risk analysis. A further aspect arises in the area of project analysis, and a variety of techniques have been devised to assist with the handling of risk in such cases. The more commonly proposed methods include the following:

- (i) The use of risk adjusted discount rates. (e.g. Fama 1977)
- (ii) The use of certainty-equivalents. (e.g. Brealey & Myers : P176)

- (iii) The use of probabilities and expected values. (e.g. Hertz & Thomas (1983))
- (iv) The use of decision trees (sometimes incorporating probabilities). (e.g. Moore and Thomas 1976, Raiffa 1968)
- (v) Simulation. (e.g. Hertz 1968)
- (vi) Scenario Analysis.
- (vii) Break-even analysis. (e.g. Reinhardt 1973)

These methods are typically seen as ways of identifying the major uncertainties surrounding a project, or of identifying the principal threats to its success. They do not act as alternatives to the calculation of net present values. Many of the methods used are derived from operational research or statistics. Most can be used independently or jointly to supplement or confirm the decision making process.

3. Criticisms and Weaknesses of Finance Theory

3.1 Introduction

In recent years the orientation of much of the finance literature has been on modelling, with emphasis on the development of formal models of economic choice and the subsequent rigorous testing of these models by the use of statistics and econometrics. There has been little place for what has been described as "descriptive reality" although criticisms of its lack of attention were made many years ago by writers such as Donaldson (1963:1969). However, recently there have been rather more suggestions that such an approach is misguided. For example, Derkinderen and Crum (1981) pointed out that:

"Adherents to this growing school of thought believe that since observed behavior in the market place is the aggregation of the behavior of individuals, more attention to the attributes of the process of risky decision making by individuals and groups will give useful insight to economic modellers. That is, they believe that better models can be built that should lead to substantially more meaningful and higher quality predictions about observed phenomenon if the models are grounded more firmly in the underlying precepts of behavior." (P2)

Criticisms cover a number of areas, including objectives, environmental complexity, the realism of

the assumptions of the traditional models, the relationship between capital budgeting techniques and strategic decisions, and criticisms related to perceived organisational or empirical behaviour. Inevitably any sub-division of these criticisms tends to be somewhat artificial. Nevertheless, these areas are examined in more detail below in order to provide a framework for analysis. Their inter-relationships are readily apparent.

3.2 Criticisms of Objectives

As has already been pointed out, a considerable amount of literature exists on organisational goals. The purpose of this section is to specifically consider literature setting out to criticise finance theory. Criticisms cover a number of areas. Gordon (1981) has considered the objective of share price maximisation more fully. He considered that the primary interest of management is in profitability, not in their corporations' current market values. While profitability and market value are related, they are by no means identical. Gordon further pointed out that corporate executives also emphasize such things as growth, security, and personnel. The importance of security is reflected in concern about capital structure and diversification. The lower the proportion of debt in the capital structure the greater the stability of net income. Diversification, typically through conglomerate mergers or takeovers, can reduce the instability of business income. Since diversification is of little benefit to shareholders its continued existence may be considered evidence of management's desire for security.

Carter (1981) criticised (albeit implicitly) the allegiance of finance-cum-economic theorists to "pure" economics, and not to management. He has considered the apparent conflict between the traditional approach and behaviouralists in some detail, and identified a number of ideas from the latter, which are relevant to this study. Probably the most important of these are ideas first introduced by Cyert and March (1963) and Simon (1957:1955). The former stressed that in the search for alternatives, the search is typically localised and simple minded. Simon offered the idea of "*bounded rationality*", which implies that not all information available can be rationalised and assimilated, so not all alternatives can be evaluated. He also introduced the idea of satisficing, reference to which has already been made. Other relevant behavioural ideas relate to memory and learning experiences, diffusion of ideas, differences between individual and organisational decision making, and tastes and

changes therein. The recognition of these factors is likely to lead to the development of a better model of capital budgeting.

Zeleny (1981) has followed up some of these ideas, in particular those relating to satisficing, as compared with the more traditional ideas of optimisation. He criticised the conventional ideas of optimisation but suggests that satisficing is not necessarily all it appears to be. On conventional views on optimisation he said:

"... real decisions are based on a progressive comparison of the preference systems of multiple actors, in a generally fuzzy environment, evolving through interactions within the sphere of different political, value, and power frameworks. The preferences themselves are fuzzy, incompletely formulated, non transitive, and often inconsistent and conflicting. They differ from one actor to another, and they change throughout the decision-making process based on new circumstances and new information. To quantify and aggregate such a variety of factors into a single objective function, that is, one and only one criterion of choice, is an undesirable reduction of reality....."

"Complex decision-making issues are essentially marked by multiple criteria, and decision makers are more concerned with resolving their conflict, reducing risk, and managing cognitive strain than with optimizing solutions ... The multiple criteria decision making model becomes a methodology supporting the problem-solving process of the decision maker: the role of the analyst is not to make prescriptions or specific recommendations - there is no solution independent of the decision maker's judgement." (P203/4)

In spite of these arguments Zeleny did not consider satisficing to be an appropriate objective, considering it to be the result of an incomplete or unsuccessful attempt at optimization. It was not seen as a guiding principle of human decision-making behaviour. Zeleny, while accepting the principle of limited or bounded rationality, argued that it is compatible with optimisation. Even given all the constraints and limitations it is still possible to pursue a given maximising objective, subject to these constraints. This approach is referred to as "bounded optimality". Nevertheless, Zeleny recognised that:

"optimization is a technical concept, inapplicable in situations where conflict, ambiguity, multi-dimensionality, and qualitative judgement are dominant. There can be no absolute definition of optimality, any such conception is contingent on the type of problem involved, the decision maker's purpose, ability, and needs; and the context of the problem. The dilemma faced is substantial. On the one hand, the 'best' solution is that solution which is judged 'best' by the decision maker(s) involved. It is the one that is preferred, understood, accepted, supported and implemented with confidence. On the other hand, the decision maker could, because of personal bounded rationality, lavish confidence on solutions that are falsely perceived as superior. The role of the analyst is to help build up decision maker's confidence or to gather arguments to weaken it." (P207/8)

Other writers, e.g. Spronk (1981), have recognised the existence of multiple goals, and argued

for the use of interactive multiple goal programming. Such an approach deals with all goal variables simultaneously, and permits the investigation of trade-offs between them in a systematic way. Spronk argued that the use of goal programming corresponds with the decision makers reality. He quoted Ashton and Atkins (1977) who pointed out that the use of various targets and goals, and other indicators of company performance, is frequently found in practice. Nevertheless, Spronk recognised the practical difficulties of the goal programming approach, since the number of goal variables can easily grow to an unmanageable number.

Schmidt (1981) has drawn attention to the dynamic and evolving nature of the objective-setting process within firms. Strategy is concerned with adapting a firm to a changing environment, so formalised planning systems need to be able to match changing objectives and changing environments. In fulfilling such a requirement a flexible approach is needed. Schmidt listed seven *"flexibility types"* of use in a formalised planning system. A flexible approach of this type permits model changes, use of alternative data, and interactive decision making. If the concept of multiple criteria decision making is accepted, the use of such a flexible approach becomes inevitable. It is worth noting that Schmidt, in dealing with the flexibility of corporate planning models, also emphasised the flexible use of feedback. Donaldson (1985) in a more recent study of the formation of corporate goals, found that companies did not put maximum profit as the first goal. Nor did they work towards some absolute financial target. Multiple financial goals were found to be set, with priorities changing as the competitive and corporate environment changed. Managing a company's financial goals system was thus found to be *"an unending process in which competing and conflicting priorities must be balanced"*.

3.3 Criticisms concerning Environmental Complexity

Most of the criticisms of the last section were based upon arguments about diversity and complexity of objectives and led to a desire for a broadened perspective for making financial decisions. Other writers have emphasised the complexity of rather broader environmental factors, pointing out that recent years have seen dramatic changes in environmental turbulence. For example Derkinderen and Crum (1981) have called for greater consideration of environmental factors in the resource allocation process. They suggested that the firm should be treated as an organic open system that

continually interacts with its environment, both influencing and being influenced by it. They pointed out that:

"In managing the corporate resource allocation process, today's manager faces increased situational fluidity and a multitude of complexities, most of which were unknown, and some even unimagined, a decade ago ...

"Although these situations are pervasive in their impact on companies, at the level of capital budgeting their effect can be generally characterised as increasing uncertainty and shortening the time horizon over which sufficiently reliable information is available for formalizing budgets and plans - if indeed it is possible to derive any meaningful cash flow projections in which the decision maker has adequate confidence. Decisions still have to be made and resources allocated, but dynamics and increasing complexity render such decisions far more difficult, and the consequences of a 'bad' choice much more severe for the continued profitability - perhaps even the survival - of the firm." (P39)(Emphasis added)

In such circumstances careful definition and specification of the boundaries of the environment relevant to the firm is advisable. Clearly changes in relevant factors and/or objectives will in turn lead to changes in the specification, while the interests of other stakeholders (including employees, customers, suppliers, management, the local community, and society as a whole) need to be included. Interestingly, in considering possible reactions to the environment Derkinderen and Crum also introduced the presumption that the firm would have infinite life, so its managers are expected to take whatever steps they believe necessary to preserve the corporation in the long term - even if these are contrary to the short-run wishes of the owner.

Bertoneche (1981) identified the following areas in which the business environment has become much more complex: slower and more erratic economic growth; increased worldwide competition; increased regulatory constraints; reduced availability of capital and raw materials; and decreased predictability of several parameters such as inflation rates, exchange rates, commodity prices, and so on. In a small study of six companies Bertoneche found that these complexities were causing companies to look at their investment decision-making process in a different perspective. In general he found that discounted cash flow and other refined techniques did not help the decision-making process. Problems seemed to be centred on the assumptions behind projects, and on the realistic investigation of alternatives. Interestingly, the study also identified the use of DCF methods and the refined techniques as a source of confusion and frustration among operating managers, unless they had a comprehensive understanding of the corporate strategy.

Gandemo (1981) has also made a number of observations on the influence of increased environmental turbulence on corporate investment and financial planning. He reminded us that with

rising fixed costs, which usually consist of labour, depreciation and interest, returns on total capital become very sensitive to even relatively small changes in the sales volume. If such a situation is combined with general increases in debt/equity ratios, the fluctuations in returns on equity for individual companies could be considerable. The choice of an optimal capital structure was thus seen as a much more difficult exercise when conditions are changing. Existing theories relating to capital structure do not include all the variables which are relevant under such conditions. Factors such as the risk of being taken over, the risk of being unable to cover fixed financial obligations, and the potential impact of a long period of recession could all be significant in periods of increased environmental turbulence.

Gandemo referred to the work of Donaldson (1969) who found little evidence that management searched for optimal debt-equity ratios. This should not be taken to mean that management did not have any views on the area. They did, particularly where extremes might adversely affect market value. Donaldson saw the approach to capital structure as being:

"an evolutionary process of feeling out new positions in a constantly changing world, positions which, it is hoped, will be both safe and successful by whatever yardstick the company sets for itself." (P249)

Gandemo pointed to a number of changes in the financial environment in recent years. Reduced rates of return on total capital, and effective tax discrimination against share issues as compared with bond issues. There has thus been a move towards the use of external debt to finance growth, a move which is satisfactory if the leverage effect is positive. Risk preferences and criteria for evaluating debt/equity ratios have shifted. Financial institutions have changed in character, particularly those with state backing or influence. Indeed public sector involvement in the allocation of capital in the community has also caused considerable changes. Policy has tended to move from general measures towards selective measures, from economic policy to industrial policy. Such a change brings with it the real risk that companies may become more interested in getting the most out of the various economic-political measures than in improving their operating and commercial efficiency.

Gandemo identified a number of areas which appeared to justify further research. These include: companies not quoted on stock markets; the effect of measures used by governments of different countries to attract new industries; the effect of governmental measures on real planning and decision making at the corporate level; differences in planning and decision making between growing and profitable companies, and unprofitable companies or companies in crisis; and the effect of mergers and

takeovers, or decentralised decision making, on decision making, particularly in imperfect markets. All represent areas not covered adequately by the literature and research.

3.4 Criticisms of the Underlying Assumptions of Finance Theory

A number of writers have criticised the underlying assumptions of finance theory, and its practical applicability. Franke (1981) has criticised assumptions about information costs and availability. Many models in finance theory are based upon assumptions of perfect, costless information, yet information is seldom, if ever, of this type. If such an assumption is dropped a number of important consequences follow. Franke put forward a number of tentative arguments, including the following:

- (i) In practice managers have more freedom in their actions than is assumed in finance theory, since the owners of the firm exercise only 'loose' control. When linked with the ideas on potential conflicts of interest between shareholders and managers, which are dealt with later, the importance of such freedom of action is considerable.
- (ii) Knowledge about feasible strategies, cash flow patterns associated with different strategies, and market valuation of cash flows is diffuse.
- (iii) Franke suggested that market value is a composite measure of many different factors and quoted Hertz (1964) who analysed nine factors (or subgoals), namely market volume, sales price, market growth rate, market share, investment outlay, lifetime of the investment, salvage value of the investment, variable cost, and overhead cost. Under such a model projects would be accepted if their estimated market value is positive and a certain number of subgoals reached their minimum acceptance standards. Such an approach could be interpreted as a diversification in objectives.

Carter (1981) has given four reasons why managers do not use the more comprehensive financial theory models for corporate planning and long run capital budgeting decisions.

- (i) Data requirements are large and costly
- (ii) Accuracy is suspect
- (iii) The models never seem to work right, and need constant alteration and adjustment of data inputs.
- (iv) The marginal returns to management from time spent worrying about detailed cash flows are probably much less than from seeking new project ideas and from carefully implementing or revising old

projects that have been approved.

Derkinderen and Crum (1981) have raised a number of doubts with regard to project value additivity, which was seen as a "fundamental principle" necessary for the use of current analytical methods. The characteristics of a securities portfolio may not be isomorphic with those of a firm, a fact which:

"either has not been considered adequately in the literature or has been assumed away. Hypothesizing the existence of isomorphism is convenient for analytical theories since strong and relatively simple generalized linkages can then be formed to describe the allocation of scarce resources via the price system mechanism. However, without isomorphism, the apparent similarities between securities portfolios and corporations can lead to carrying the generalizations a bit too far, thus distorting the nature of the decision-making context. As long as conventional finance theory does not claim practical applicability for corporate investment decisions, there are no problems. But often there are pretensions in this respect with an inherent danger for misguided direction." (P42)

Particular concerns of Derkinderen and Crum in this area were:

- (i) projects in a portfolio are not economically independent in the way that securities in a portfolio are.
- (ii) it is not true that all markets are completely efficient and that all 'investors' can achieve diversification, so that only systematic risk is relevant.
- (iii) with effective multiperiod capital rationing the optimum capital budget is no longer the simple linear sum of the net present value of the most profitable projects. Other project characteristics must also be considered together with project interdependence. In addition, when there is a great deal of uncertainty in the environment, especially when resources are scarce, the problems of identifying new market opportunities, new technologies and other such factors become intimately interwoven with the selection process for new investment projects.

The essence of the arguments of Derkinderen and Crum is that certain characteristics of business do not exist for securities portfolios, and these seriously compromise the assumption of isomorphism. This in turn makes some of the ideas found in finance theory less than completely valid for corporate resource allocation decisions.

3.5 Criticisms relating to Corporate Strategy

Criticisms and comments in this area are of two main types.

- (i) If capital investment is to be effective, it needs to be put into a broader perspective,

(ii) traditional capital budgeting tends to ignore the major strategic issues facing the company, or to assume that the major strategic decisions have actually been made.

In fact these two are closely related, as will be seen below.

Derkinderen and Crum (1981) have suggested that a systems approach should be adopted, and that capital budgeting activities should be conducted explicitly within the context of the overall strategy of the firm. The definition of the interactions between the company and its environment, and the continuous maintenance and regulation of information flows between the company and its environment, are essential parts of the process. However, merely collecting data is not sufficient. Some kind of filtering device in the scanning system is needed, so as to sort out relevant information from background noise. Derkinderen and Crum suggested that a fusion of certain concepts from the field of strategic management with characteristics generally employed in finance would provide a useful approach. They pointed out that a systems approach is not necessarily a contradiction of, or substitute for, analytical ideas typically found in the finance literature. Systems thinking was seen as supplementing the latter by concentrating attention on interrelationships. The systems approach should help to ensure an effective distribution of scarce resources to meet environmental challenges and opportunities, whereas analytical procedures should help to ensure an efficient allocation. A combination of the two approaches should provide considerable benefit.

Coda and Dematte (1981) have considered the adequacy of traditional financial concepts and techniques in relation to their handling of strategic decisions. They argued that:

"There is a multilevel decision system, and at the higher level - the strategic one - a financial approach different from the traditional one is applied: usual methods for project evaluation, such as payback period or net present value, are eventually applied, as complementary instruments, after the higher-level resource allocation decision is taken. The economic and financial evaluation for such resource allocation emerges from an iterative process more complex than is usually assumed." (p98/9)

Various debates on objectives were considered, demonstrating that many finance scholars consider that in the real world, the decision-making process takes a form quite different from that usually assumed. Particular problems were associated with higher-level decisions. Yet these decisions, relating to strategy, are nevertheless investment decisions. Indeed, Coda and Dematte regarded a decision of this type as a metainvestment choice, pointing out that it effectively commits a company to a certain strategic approach which will require a further sequence of investments to be made subsequently. They further argued that decisions of this type, to stay in business for strategic

reasons, are also influenced by ideas on a portfolio strategy. Coda and Dematte summarised their views on the nature of the business strategy decision as follows:

"Basically, the business strategy is a long term game in which one strives to gain a dominance through excellence in a specific business area, through a sequence of actions and investments consistently organized around a business formula, with the aim to recover the investments plus a premium. As the economic theory would suggest, and as experience shows, the level of the premium depends on the 'richness' of the 'soil' and on its level of dominance or the degree of protection of the 'territory'.

"... the decision to play a certain strategy in a business area must be implemented by a number of investments and specific resource commitments. But the strategy formulation is a more aggregated decision that encompasses a period of time longer than that of the single investment. Furthermore, once this strategic decision has been taken, it stands as a framework against which single projects must be measured." (P102)

Given this approach, the question of financial evaluation needs to be considered. Coda and Dematte broke their analysis down into three areas:

1. Time horizon - In conventional capital budgeting analysis projects are considered over the period of the investment. If the same concept were used with a business strategy approach, the time scale would need to be to the time that the company goes out of business. However in most cases, the forecasting of cash flows for such a long period is virtually impossible. This has a number of important implications. Coda and Dematte pointed out that in practice the time scale used in business strategy decisions goes from the early stages of a business life cycle to the flex point of that cycle. They argued that the reason for this is linked with a theory of the evolution of the competition during the various life-cycle stages. It is assumed that if a company reaches the maturity stage in a dominant position, then a good return on the later related investments will follow. Hence the crucial periods for an investment are the first life-cycle stages, when even the cash flows may be negative. Under such circumstances companies pay considerable attention to these early stages, especially the penetration stage, where the financial traps are usually hidden. Coda and Dematte argued that once a company has reached the conviction that it can dominate a business area, it is likely to proceed with subsequent investments without computing the global rate of return on them. In terms of financial evaluation the focus is thus on the cash flow sequence up to the maturity stage.
2. Decision Criteria - If the rate of return is not calculated, other decision criteria need to be identified. The essence of the arguments of Coda and Dematte is that decisions are strongly influenced by the probability of reaching a good degree of control over the business area, and, though to a lesser

extent, the estimated richness of the market segment. The financial aspects which are seen as being of most importance relate to the capacity of the company to raise the desired mix of funds. The financial feasibility of various strategic alternatives is seen as an important influence on decisions. Coda and Dematte pointed out that the metainvestment decision is heavily influenced by the funding possibility, irrespective of the rate of return. This is somewhat different to what is assumed in finance theory.

3. Role of Financial Reserves in the Business Strategy Decision – Coda and Dematte pointed out that strategy appears to be heavily influenced by the company's present and future financial reserves. Managers appear to be particularly concerned with ensuring that the company will be financially viable through the life cycle and especially in periods of potential recession.

Coda and Dematte summed up by suggesting that the financial evaluation of a business should answer the following questions:

"1. What are the approximate level and the variance of the return on investments (instead of the internal rate of return) required for the creation or maintenance of the dominance system in a given territory? Are they reciprocally adequate? And do they satisfy the expectations of those who invest in the business their entrepreneurial, managerial, and financial resources?"

"2. Will the business strategy be feasible with regard to the company's liquidity structure? Or will it endanger the liquidity reserves and the unused debt capacity, making completion of the business strategy problematic?"

"3. Will the capital structure and especially the debt-equity changes induced by the business strategy impair the solidity of the company to the level of provoking a confidence crisis in the financial community as far as the saleability is concerned?" (P104)

Question 1 is concerned with assessing the economic viability of a specific strategy. Questions 2 and 3 are concerned with financial feasibility of the strategy. These two kinds of evaluation were seen as being distinct but interrelated. They are not supported by the traditional capital-budgeting approach. However, they can be used in conjunction with financial simulation to evaluate the effect of changes in the decision variable, or external variables, on such things as the profitability, liquidity, and solidity of the company. The use of such models is seen as enabling managers to evaluate the risk connected with a given business strategy and to modify the strategic posture if required, so as to obtain a satisfactory trade-off between the basic financial strategic variables, regarded by Coda and Dematte as growth rate, self-financing rate, leverage, and liquidity reserves.

Coda and Dematte viewed the decision system of a company as a box within a box structure, where

the single investments are the smallest boxes, dependent on the business strategy choice. The business strategy provides the framework against which single investment proposals can be measured. Each individual investment project must therefore be consistent with the overall strategy. In practice, many investment alternatives may be consistent with the strategy. It is in choosing between such alternatives that the traditional capital-budgeting techniques can play a relevant role. They enable the comparison of investment alternatives which are consistent with the overall strategy, but different as to timing and amount of cash flow. Where investments are large in relation to the total size of the company, the single investment decision is likely to have a strong impact on the overall strategy, possibly leading to its modification. Under such circumstances it is necessary to evaluate the impact of individual projects on the corporate financial structure.

Bertoneche (1981) made similar comments, pointing out that:

"In essence, the common underlying assumption of all financially based approaches to the resource allocation process is that the fundamental strategic decisions, ... have been made ... In the literature of finance, very little attention has been paid to strategic considerations for the asset planning and allocation process ... This situation may seem surprising and dangerous since it leads to a project-by-project approach." (P107)

Bertoneche quoted Hastie, (1974) who listed nine steps in the investment decision making process, which are broadly as follows:

1. Determine the alternative investments available.
2. Weigh the strategic aspects of the alternatives.
3. Collect data and information on the viable alternatives.
4. Develop the assumptions and calculate incremental cash flows.
5. Measure the net benefits.
6. Assess the effect of different assumptions on the measured results.
7. Analyse the risk of the project.
8. Weigh the benefits and strategic purpose of the project against its risk and the constraints of the corporation.
9. Communicate the relevant information to top management in a way which facilitates effective decision making.

Bertoneche argued that too much attention has been concentrated on steps 4 and 5, with little emphasis being put on the other steps, particularly 2, 8 and 9. He placed considerable importance on an

analysis of projects, to see whether they fit with the overall strategy of the corporation. He suggested the use of some kind of existing general framework, citing that of the Boston Consulting Group (BCG), as one example. This approach describes the business portfolio according to two main criteria, namely relative market share and rate of growth, and will be discussed in more detail in the next chapter. Such an approach would help the business to define areas in which the corporation wants to expand, maintain the status quo, or to contract or leave. Capital budgeting decisions must then be made in the context of the long run strategic plan. It is this which ultimately determines the allocation of capital resources. Bertoneche pointed to the difficulty of making certain decisions on a purely financial basis, giving as an example the purchase of a patent to prevent competition. Yet such an acquisition might be a very worthwhile thing to do from a strategic viewpoint. Existing financial techniques were considered to still have a role to play, but some adaptation is necessary.

The preliminary conclusions of Bertoneche's study led him to identify certain important consequences.

"In corporate practice, the general strategy of the firm must be made clear at the various levels of management so that projects may receive a more complete and precise review of their strategic ramifications. The capital expenditure analyses should not only be pages of figures and computations, but they should also clearly state the basic assumptions and raise the right strategic questions. At the research level, the models presently available have not captured the essence of the managerial decision process, and trying to refine techniques of financial measurement and raising theoretical questions is just a small part of the overall investment decision making process. Research should be directed towards the integration of the traditional capital-budget framework into the overall resource allocation process of the company by stressing the strategic aspects and adapting the current techniques to the increasing environmental complexity." (P115) (emphasis added)

Bertoneche quoted Bower (1972):

"It would be extremely useful if we could discover a way to integrate the powerful logic of the financial model into a truly descriptive model of the resource allocation process in large organizations." (p23) (emphasis added)

Crum and Derkinderen (1981) have attempted to devise a set of realistic assumptions for the development of decision models or theories. These assumptions are based on realistic assessments of the environment of decision making, and the analytical ability of decision makers. Solutions achieved are the best only in the sense that given the limitations which exist, no better alternatives can be identified. It also needs to be recognised that while decisions may appear to be made at a particular point in time, the process leading up to a decision is frequently a long one, involving a number of different people. The behavioural implications of this are important. Other fundamental realities also

need to be recognised:

"In a world of uncertainty with incomplete information available, strategic management dictates that good current decisions be defined not only in terms of effective utilization of available information (the classical conception) but also in terms of their built in flexibility to enable the firm to react appropriately when new information is obtained in the future - that is, the future consequences of current decisions must be considered explicitly as part of the initial decision process." (P159) (emphasis added)

The implications of a different set of starting assumptions are considerable. If the firm does not possess all the needed information, or cannot process it completely effectively, optimisation becomes difficult, if not impossible. If the firm consists of a set of individuals with differing motives and value systems, managers are likely to become more concerned with resolving conflict between individuals and power groups. Some kind of decision criteria need to be established, however, and targets set for each. Under such circumstances managers are then likely to concern themselves with achieving an acceptable balance between the various criteria, so as to satisfy the various power groups, including shareholders. The single minded pursuit of shareholder wealth maximisation is thus unlikely.

Crum and Derkinderen suggested five distinct classes of decision criteria.

- (i) Prescreening or filter variables - these act as a means of eliminating alternatives without the need for further analysis. For example, Crum and Derkinderen suggested that projects that have serious implications of bankruptcy will often be eliminated, regardless of the potential high returns that go with this risk.
- (ii) Measures of aggregate performance over time - including measures such as net present value, internal rate of return, and profitability index. Crum and Derkinderen regarded most of the measures suggested in the finance literature as falling within this class. They were particularly critical of the fact that these measures eliminate intertemporal information and assume that the purpose of the decision model is to establish an allocation plan for the entire planning horizon. In other words, the focus of the model is not on making an initial decision that may be updated in the future, but on the specification of all decisions to be taken during the period without updating at a later point in time. Such an assumption is seen as being of questionable merit.
- (iii) Criteria that ensure corporate stability and harmony - Crum and Derkinderen included in this class such things as the maintenance of earnings per share, the achievement of an adequate return on equity each period, the balancing of various growth rates, and the preservation of satisfactory liquidity and financial ratio relationships. They pointed out that criteria such as these are generally seen as

constraints on decisions rather than as separate goals or objectives. Whichever way they are viewed, Crum and Derkinderen argued that as managers seem to consider them to be quite important, they should be evaluated explicitly by decision models.

Crum and Derkinderen considered that the above criteria are inadequate for making effective decisions in a world of uncertainty. They called for a shifting in the emphasis of the resource allocation process from long range planning to one of making the best possible current decisions, given the amount of information available. An important aspect of such decisions is that they should have adequate flexibility so that as events unfold the firm can react appropriately.

Crum and Derkinderen thus developed two further classes of criteria.

(iv) Criteria concerned with strategically positioning the firm, in the sense of maximising the number of feasible options that lead to favourable outcomes in the future as a result of current decisions.

(v) Criteria concerned with strategic positioning in the sense of minimizing the number of feasible paths that lead to unfavourable outcomes in the future as a result of current decisions.

Crum and Derkinderen considered the contribution of the last two to be potentially very significant. However, they pointed out that it is difficult to set out specific criteria that can be used for these classes, since strategic positioning concepts are *very situation dependent*. Hence the importance of the decision context in settling such criteria.

Crum and Derkinderen then considered various ways in which an analysis can be structured so as to enable a decision to be made based upon multiple criteria. They identified five broad categories, but finally pointed to the system of *Interactive Multiple Objective Discrete programming* (MOD programming), which they consider to be superior to other methodologies.

Before leaving this section on criticisms of finance theory in relation to corporate strategy, it is perhaps appropriate to make reference to the work of Hayes and Garvin (1982), who appeared to blame discounted cash flow for many of the industrial difficulties facing the USA. A particular criticism was that DCF techniques have inherent weaknesses that make them inappropriate for evaluating long term projects. It has been argued (Myers 1984; Hodder and Riggs 1985) that such criticisms are invalid, and are due to the misapplication or misinterpretation of the techniques. Potential dangers in DCF analysis can relate to biased or inappropriate assumptions, improper treatment of inflation effects, excessive risk adjustments (particularly where risk declines as a project takes off), and ranking on the basis of internal rate of return. Such dangers, while real, should not be seen as valid criticisms of

finance theory, but as a problem of application. Myers went on to offer three explanations for the gap between finance theory and strategic planning: they may be kept apart by differences in language and culture; DCF analysis may fail in certain strategic applications; and, as mentioned above, DCF analysis may be misused in strategic applications. He argued that strategic planning needs finance, and that both sides should make a conscious effort to reconcile financial and strategic analysis.

3.6 Organisational/Behavioural Criticisms

This section deals with various criticisms and studies which cast doubt on the validity of the finance theory approach to capital budgeting, principally for reasons to do with organisational or behavioural issues. Criticisms generally fall into the following categories: criticisms relating to the conflict of interest between shareholders and managers; criticisms relating to the nature of the decision making process, and criticisms relating to the complex nature of organisations. A considerable degree of overlap exists between these categories, and the criticisms identified in earlier sections.

One of the earliest critics of finance theory was Donaldson (1963), who outlined the different financial goals which shareholders and managers might have. These differences were seen as being sufficiently great to provide serious problems for the practical application of finance theory. Donaldson pointed out that in spite of this fact most academic writers had been on the side of stockholder interest in discussions on how business ought to be run. He expressed the view that it would be finance theory and not management practice that would have to change if the two were to continue to have a valid relationship with each other.

Hull (1982) also reviewed some of the conflicts of interest which can arise between shareholders and managers, and attempted to update some of Donaldson's work. He concluded that there had been little sign of financial theory changing in the way suggested by Donaldson. Specific areas of potential conflict which were identified included the following. A manager is likely to have a far greater stake in one company than is a well diversified shareholder. Future job prospects, salary etc. are likely to depend upon survival of the particular firm in which he works. He is thus likely to be concerned with the company's total risk, whereas the shareholder is likely to be concerned primarily with systematic risk. This will in turn impact on rates of return required from capital projects, with higher returns being required by managers. A further complication is that middle managers are likely to avoid backing

projects with high risk, since their future job prospects are largely conditioned by the success of the projects they back. Middle managers interested in promotion also have a vested interest in projects which show improvements in the relatively short term. Acquisitions represent another area of potential conflict of interest, with substantial benefits accruing to management. Benefits to shareholders may be minimal or even negative, unless genuine synergistic benefits are likely to result.

Potentially important conflicts of interest arise in the areas of capital structure and dividends. Hull suggested that the costs associated with financial distress or bankruptcy are high for managers, so the resulting trade-off between the tax advantages of debt and the costs of liquidation will tend to lead the manager towards relatively low gearing levels. Similar views were expressed with regard to dividends, with the result that

"The dividend decision can therefore be viewed as a trade-off which management must make between the benefits of avoiding increases in risk and the benefits of not alienating shareholders. It is arguable that this trade off leads to the philosophy of 'let's pay as little as we can get away with'." (Hull 1981: P7)

In 1969 Donaldson again called for a broader based approach to decision making, pointing out that finance theory was strongly normative, and little concern had been paid to descriptive or empirical work.

"Traditionally, financial theorists have been more interested in the logical superstructure than in the underlying assumptions and the evidence as to their descriptive validity." (P34)

While the effort to develop normative financial theory was seen as highly desirable, Donaldson nonetheless considered it equally desirable that there should be a vigorous and concurrent effort to understand and describe real world behaviour in financial management.

"The improvement of practice necessarily begins with business as it is and moves by steps that continually balance what is desirable against what is possible and practicable. Only by examining the real world with a minimum of normative preconceptions can we hope to relate the optimal to the operational." (P34)

Donaldson then went on to take an internal view of financial decisions. His analysis suggested limits to the range of investment opportunities, typically to ventures enlarging on or extrapolating from existing product or market bases. The time taken to invest and disinvest in real assets was also seen as substantially reducing the opportunity to apply diversification concepts. Returns of most relevance to managers were seen as residual flows after dividends. Managers were likely to have particular views of risk, which would be influenced by the desire to preserve and expand the corporate entity on which their future depends. Donaldson used these ideas to develop the concept of financial mobility. He

argued that the challenge to management is provided by unexpected changes of substantial proportions affecting an important aspect of operations. Satisfactory handling of such events requires an understanding of what is happening and how to adapt, time to act, and capacity to act. Donaldson's 1969 study was concerned principally with the latter, namely the preservation of the economic and financial resources, which he regarded as the key to management's capacity to act in the face of change. The aim of financial mobility is the achievement of a state of equilibrium in funds flow which is consistent with the corporate objectives. The basic elements of a developed strategy of mobility were seen as including:

- (i) a plan for the preservation or achievement of funds flow equilibrium under known existing and expected conditions;
- (ii) the identification of key financial policies for debt and dividends;
- (iii) a search process designed to identify hitherto unexpected events as soon as possible;
- (iv) the identification of the resources which might be needed if an unexpected event arises;
- (v) the development of strategies for dealing with unexpected events.

The resources of mobility include balance sheet items and future inflows, with aspects to do with amounts, timing and probability. These are influenced by such things as the competitive position, since the quality and staying power of earnings is of considerable importance in the management of financial mobility.

More recent work by Donaldson (1985) is consistent with his earlier work. The complexity of financial objectives has already been noted. In addition Donaldson also commented on the trade-offs which need to be made between growth and risk. He pointed to the perceived random nature of access to capital market funds, and the resulting instillation of a spirit of self sufficiency in many managers. This is seen as a rationale for the commonly found reliance on internal funds to fund growth coupled with conservative debt levels. Donaldson's research found that most of the companies included in his sample preferred to scale down growth rather than raise further equity in the financial markets. Diversification is seen as being consistent with this desire for financial self-sufficiency, since it provides managers with a kind of internal capital market, stabilises corporate income, ensures more use of human and financial resources, and allows an organisation to survive the demise of particular product lines. Donaldson pointed out that objectives and approaches of the type identified above are both rational and justifiable. They are nonetheless rather different to those assumed in finance theory.

and their implications for investment and financing decisions are considerable.

Other writers (e.g. King 1975, Pinches 1982) have also criticised various aspects of finance theory, as an inadequate guide to behaviour. King argued that capital budgeting theory is principally concerned with the optimal choice of capital projects, and that by adopting a scientific model of decision making it implicitly accepts that evaluation is central to the process. He pointed out that this required two tacit assumptions to be made, namely that projects exist ready for evaluation, and that choosing between articulated projects is sufficient to obtain an optimal capital allocation. Neither is considered valid. Projects need to be created and this requires a process of search, which pervades the entire organisation. This search process is seen as having a number of crucial stages, including triggering, screening and definition. However

"capital budgeting theory and the scientific model offers no help to those who struggle to articulate a project and to gather relevant information ... Capital budgeting theory therefore makes no contribution to how screening and definition should be conducted, how the search process should be directed, except by holding up an ideal towards which those involved are impugned to aim". (King 1975 : P78)

In short, the formal processes derived from the theory represent only a relatively small part of the decision making process. The second problem referred to above relates to the way in which central management often has to make decisions on proposals from more junior levels of management. Under such circumstances they can make judgements on the proposals as put forward. However, they do not necessarily know the range of alternatives which are available, or if any information is either biased or lacking from the descriptions given to them. Decisions in such circumstances can clearly be sub-optimal.

King concluded that the majority of the areas of decision making remained unexplored, and suggested further research to develop an understanding of the relationships between organisational structure, decision making procedures, creativity, commitment and bias.

Pinches (1982) identified a body of literature dealing with how decisions are made in organisations, and related this to the capital budgeting process. Some of the main points coming out of the Pinches paper are as follows:

"1. Coalitions, interpersonal factors, bargaining and politics often play an important role in the selection or rejection of capital budgeting projects.

2. The capital budgeting process is largely iterative with screening taking place in a somewhat sequential fashion.

3. *Multiple criteria are employed for decision making.*
4. *Information problems and data uncertainties abound.*
5. *The proper treatment of risk is still a major source of concern.*
6. *The reward and punishment system employed has an important impact on capital budgeting decisions."* (P 8/9)

Pinches concluded that the approach to capital budgeting found in finance theory was "myopic", and could easily lead executives to view the problem as one of generating the "right numbers" to get a project accepted. He recommended that greater considerations should be given to determining how strategic and capital budgeting decisions are actually made, to broadening the perception of the capital budgeting process, and to researching a variety of capital budgeting related topics, notably information needs, political processes and risk measurement.

Particularly interesting studies referred to by Pinches were those of Bower (1972), Carter (1971) and Mintzberg et al (1976). These studies took a rather different approach to the problem. For example, Bower was able to construct an explanation of capital investment as a function of structure and process at the level of the organisation. Carter observed that a decision to go ahead with a project was seen as a way of putting aside ambiguity so as to take on a positive thinking approach, implying that decisions ought to be perceived as part of a continuing process. Mintzberg et al identified capital budgeting as a *"somewhat distorted political process far less analytical than the normative literature suggests"*. (P260) A more recent study (Berry 1984) also approached the capital budgeting process from this kind of standpoint. Berry found evidence that goals were differently perceived and acknowledged by managers, and that this perception was related to the closeness of the managers to the environment to which the goal referred. He also found that managers saw the capital budgeting process as integrative, both in terms of goals and control. Nevertheless his findings did suggest that managers had a rather limited appreciation of the impact of activity in other divisions on their own capital budgets. Some evidence of "game" playing was found, with top management reducing subordinates submissions, while junior managers occasionally put in projects to draw fire, or put them in ahead of time.

The implications of this particular section are fairly clear. The financial theory relating to capital budgeting does not adequately explain actual behaviour. The decision making process is more complex than is assumed by this theory. Rational alternative theories may be derived which have little

to do with rationality in an analytical or economic sense, at least with regard to shareholder interests. The impact of organisational structure, behaviour and politics on the capital budgeting process may be considerable.

4. Empirical research on the use of capital budgeting techniques

4.1 Introduction

A number of studies have been made in both the UK and the USA in recent years as to the practical usefulness of capital budgeting techniques. In the UK the most recent study is that of Richard Pike (1982), though an earlier study was made in 1976 by Westwick & Shohet. In the USA a whole string of research studies have attempted to ask questions on capital budgeting methods in practice. These are well summarised by Petty and Scott (1981) in one of a series of essays set out in "Readings in Strategy for Corporate Investment" (Derkinderen and Crum:1981), and this essay will form the basis of the comments made here, at least as far as the USA is concerned.

The research conducted was categorised by Petty and Scott into four headings: goals, organisation and stages in the investment analysis process; evaluation methods; required rates of return; and recognition of risk. Pike followed similar logic, splitting his project into the following areas: planning and evaluation procedures; control procedures; evaluation techniques; risk appraisal techniques; and sophistication in Capital Budgeting. Considerable overlap exists, and where possible the UK and USA surveys will be reviewed concurrently.

The results of these studies have a number of disconcerting implications for theorists, as can be seen from the following sections. In broad terms, the findings suggest inconsistencies between theory and practice in the areas of goals, the weighting given to various techniques, and the importance of the various techniques in the overall process.

4.2 Goals, objectives and Capital budgeting systems

On objectives the various American studies referred to tend to support the notion that managers have multiple goals. Share price maximisation was frequently considered to be less important than other goals, such as maximising return on investment, achieving desired growth rates, etc. Management was found to be operationally oriented, and favoured goals that could be translated into measurable targets. By comparison, the maximisation of share price was seen as an elusive goal.

One particularly interesting part of the Petty and Scott review concerned the perceived difficulties associated with the stages of the capital budgeting process. The evidence suggests that management perceives project definition and cash flow estimation to be the most difficult stage of the whole process, with project implementation and review second, and financial analysis and project selection being a poor third. This implies that academics spend a disproportionate amount of time on appraisal methods, the stage in the evaluation process regarded by managers as among the least difficult.

The Pike study included questions on administrative and planning procedures. The result indicated that a high proportion of respondents had capital budgets looking beyond two years, an up to date budgeting manual, and a formal body responsible for screening and reviewing investment proposals. It should be noted that this survey concentrated on large organisations, and the evidence clearly suggested that the larger the firm, the more likely it was to adopt the above procedures.

4.3 Evaluation methods and Techniques

Petty and Scott analysed the various surveys completed in the USA. Pike's study covered the UK. The results are somewhat disconcerting for theorists. While there is no doubt that the use of discounting techniques had increased considerably over the years, overall their use was somewhat patchy, and other methods which are theoretically less valid still seemed to be given considerable weight. Indeed the Pike survey clearly showed that more firms use payback or accounting rate of return than use NPV. There was little evidence of the use of discounted payback or bail out payback. Petty and Scott quote a 1978 survey, the results of which were considered *"provocative"*. The results of this survey showed that :

"whereas 86% of the firms used either the internal rate of return or net present value models in their procedures, only 16% used such discounting techniques"

without also using the payback period or average rate of return metrics. This same tendency to use theoretically incorrect models as supplementary or backup tools has been reported elsewhere. It seems that we know little of the reasoning behind management's reluctance to abandon the cruder methods of estimating project worth. (P.13) (emphasis added)

A further interesting feature of the surveys is the apparent relative support for IRR as compared with NPV. This is particularly noticeable in the Pike study in a table on primary evaluation methods. Even for firms with the largest capital budgets (i.e. greater than £50m), IRR was by far the most common primary method. Petty and Scott concluded, on the basis of the surveys made, that management prefers the internal rate of return technique to any of the alternatives.

While the Pike study is essentially quantitative (a subject which will be considered further later) some insights into the reasons for the above were obtained. Payback was justified by management on the grounds of its simplicity in calculation and comprehension. It was thus seen as a valuable tool for an initial screening of alternatives and for smaller, highly profitable projects with quick returns. In many cases payback was seen as being a secondary method complementing other more sophisticated methods. In Pike's main survey it was established that over 90% of the firms using multiple criteria included payback as a method. Payback was seen as providing a useful contrast to other methods, as well as shedding some additional light on marginal or risky projects. In particular, payback was seen as being of some value in risk assessment where risk is predominantly time related. Whether such a view is justified is a different issue.

Support for the Accounting Rate of Return seemed to be based upon the fact that it provided a link between a project's return and the return on the business as a whole.

Reasons given for the non-use of discounting methods generally suggested a lack of understanding by respondents of discounting methods. IRR was generally supported for three reasons. Firstly, it was thought to make ranking or comparison easier. Secondly, it was easy to understand. Thirdly, though this was of less practical significance, the method did not require the input of a hurdle rate. The first of these reasons has already been discussed and found to be invalid. The other reasons are more difficult to dispute.

Support for NPV generally derived from the theoretical justifications given earlier. Interestingly, only two respondents thought that it was easier for non-financial personnel to understand. A small number of respondents thought that both IRR and NPV were necessary.

Pike includes a number of quotations in this section which begin to get to grips with the rationale

for multiple criteria (P58). For example.

"... both (IRR and NPV) throw light on a project's financial profile. Payback completes a three-prong approach."

"It is felt that the more evaluation methods to support a programme the better."

"We use both IRR and NPV but only as supplementary sign posts because they do not show the impact on the company's profitability or balance sheet in conventional (and public) terms." (P58)

The above results pose something of a problem for the theorist. In spite of the clear theoretical advantages of NPV other methods are found to be more important in practice. One problem of course, might be that decision making in practice is unlike anything in the traditional finance literature. It has already been pointed out that managers see project definition and cash flow estimation as the most difficult stage of the whole process, with project implementation and review second, and financial analysis and project selection being a poor third. In such a situation it may be that the surveys on evaluation methods and techniques are concentrating on the wrong area. The calculation of a payback period, in IRR or NPV, may well be made, but the question then needs to be asked as to exactly how important such figures are in the final decision making process. It may well be the case that decisions are made on the basis of some overall strategic goal, of necessity, or even by whim. If cash flows cannot be estimated with any degree of precision, the relevance of the methods may diminish. The Pike study, while undoubtedly interesting and useful, stops short. It asks which evaluation methods are used, and why. The relevant questions are: How are investment decisions actually made, and how significant are the component parts of the process, one of which concerns evaluation methods, in reaching a final decision? The majority of the studies in this area have been quantitative. There is considerable scope for research of a much more qualitative nature, which attempts to identify the various nuances of decision making, to put evaluation methods more firmly in their place.

4.4 Required Rates of Return

The evidence brought together by Petty and Scott suggests fairly strongly that large firms do employ required rates of return in their capital budgeting procedures. However, a variety of different methods appear to be used to determine the discount rate. Interestingly, most of the surveys referred to by Petty and Scott do not include questions aimed at understanding how the firm arrives at its

required rate of return. Further empirical work would appear to be necessary.

4.5 Risk

The Petty and Scott summary is supportive of the view that throughout the 1970s the number of firms explicitly considering project risk has been increasing. In many cases the consideration remains subjective. Risk adjustment methods found generally covered changes in the discount rate, changes in the required payback period, the use of probabilities, sensitivity analysis, and simulation. Considerable variability was found in the use of these techniques in the various surveys. Pike found the following risk appraisal methods in use: sensitivity analysis (38%); higher required rate of return (36%); a shortened payback period (31%); and the use of probability analysis (12%). The figures in brackets are percentages of those firms which were actually using assessment methods. However, only 37% of the total number of firms surveyed by formally analysed risk. Pike concluded from this that many firms use a combination of methods for assessing project risk, while others appraise risk on a more informal basis. Of particular interest in this area was the breakdown by risk appraisal method and size of company. Of firms with a capital budget in excess of £50m in 1980/81, 77% used sensitivity analysis. Only 15% of companies with a capital budget below £5m used this technique, while 38% represented an average figure (an increase from 24% in 1975). 68% of the larger category of company used sensitivity analysis as the primary risk appraisal method. As is clear from the above figures, very little use was made of probability analysis.

The reasons given for non use of formal risk assessment were interesting. These generally fell into three categories.

- (i) Unnecessary - where projects were in familiar or well known fields. Some respondents suggested that informal methods were adequate.
- (ii) Impossible to quantify, since risk assessment is a subjective judgement, and projects vary from one to the next.
- (iii) Complexity - risk assessment was seen as a complex and time consuming business, which the ordinary manager was unable to understand.

It is interesting to note that even where formal risk assessment was conducted, a significant number of respondents nevertheless had reservations with respect to its value.

4.6 Sophistication in Capital Budgeting

Pike was concerned with assessing whether there had been any discernable trend towards greater sophistication since 1975. He found increased sophistication in the following procedural areas:

- (i) Current manual
- (ii) Review of hurdle rate
- (iii) Formal analysis of risk
- (iv) Monitoring performance
- (v) Post completion audits

However, greater sophistication in investment techniques seemed harder to find. The main techniques to have been adopted over this period were the internal rate of return method, and sensitivity analysis. Pike also found that firms were tending to use more evaluation methods. A significant increase was also identified in the number of firms considering inflation in their investment evaluations.

Pike also asked for an assessment of the importance of highly developed capital budgeting systems in the making of sound investment decisions. 54% of the respondents felt that such systems were either 'important' or 'very important'. Interestingly, the response varied significantly with size, with 38% of the smallest firms, and 71% of the largest firms making this response.

5. The Shipping Oriented Literature

A relatively small amount of literature exists which relates finance theory to shipping. Even the book by Cheng (1979), undoubtedly one of the most comprehensive books on the area, still has only one chapter devoted specifically to capital expenditure decisions, and this follows the traditional approach very closely. Hampton (1979) has also applied specifically to shipping some of the theories concerning investment appraisal. He provides considerable case material, most of which was developed from his experiences at Marine Transport Lines and in subsequent consulting, which indicates that many of the appraisal techniques clearly can be applied to shipping activities. However little examination was made of the usefulness of these techniques in relation to alternative techniques or to decision making in

general. Frankel (1982) in considering the "Management and Operations of American Shipping", has a chapter on ship finance. Included in this is a section on capital budgeting and evaluation techniques. While much of this work is very similar, at least in effect, to that described earlier, Frankel does identify five further evaluation criteria used in shipping, besides the methods already referred to in earlier sessions. The extra methods are as follows:

- (i) Capital Recovery Factor Method (CRF)
- (ii) Minimum average Annual Cost Method (ACC)
- (iii) Present Worth Method (PW)
- (iv) Equated Interest Rate of Return Method (IRR)
- (v) Minimum Required Freight Rate (RFR)

Holt (1982a) has considered some of these techniques in more detail, in particular, the minimum average annual cost method, though he refers to it as the annual capital charges or annuity method. This method, when used to select between independent projects, should give the same results as NPV and IRR. For a project to be considered acceptable, annual net returns must exceed the combined annual interest and depreciation charges. Known as the Annual Capital Charge, the appropriate amount needed to cover depreciation and interest is calculated. The appropriate figure is estimated by finding the relevant annuity factor (usually from tables), also sometimes called the "Capital Recovery Factor", and multiplying it by the project capital cost. If net annual returns (i.e. revenue less operating expenses) exceed the annual capital charge, the project should be accepted. In the event of the net annual revenue stream not being constant, it could be made constant for analytical purposes by calculating its present value and then multiplying this same by an appropriate annuity rate to convert it into a series of equal amounts each year. Capital recovery factors can also be used to make comparison between projects of unequal lives, by converting NPV's to equivalent annual cash flows (See Moon:1982). The Present Worth method is very closely related to NPV, but is related only to expenditures; while the equated interest rate of return is virtually identical to the yield method. The minimum required freight rate (RFR) is the calculated freight income needed per unit of cargo and time to cover all operating costs and to provide a required rate of return on the capital invested in the ship. The RFR could be regarded as a calculated long term average freight cost that can then be compared with actual freight rates currently prevailing.

The majority of the above techniques generally represent variations of the major techniques

given earlier. However, the minimum average annual cost method and required freight rates seem to provide useful additional insights. Their practical usefulness will thus be evaluated along with the other techniques given earlier.

In considering risk and uncertainty in shipping investment decisions, probably the best source of literature is the Seatrade Academy. This institution runs a course entitled "Understanding Investments in Shipping" regularly, at various places around the world. Both the theory and practice of investment are dealt with. A range of lectures have been given. In the main these discuss applications to the shipping industry of traditional methods, such as payback, conservative adjustments to cash flow values, sensitivity analysis, risk adjustment of the discount rate, running multiple scenarios, etc. (e.g. Gustafson:1982)

However, a number of more sophisticated attempts have been made to incorporate risk analysis, by the estimation of value ranges and probabilities, and the use of decision trees (e.g. Holt:1982b). Cumulative probability distributions have been proposed. In many cases the papers delivered were theoretical, and gave no indication of the actual usage of the techniques in the industry itself, in solving real problems (e.g. Jessop:1981ab:1982). However, in a small number of cases models had been developed with the clear aim of being commercially used, (e.g. Sychrava & Ingham:1979ab. Sychrava 1982). One such case was the adaptation by Lambert Brothers of a risk analysis computer programme for use in shipping, to assist management with the analysis and assessment of uncertainty in ship investment appraisal, market analysis and forecasting, corporate planning, budgetary/cost control and other areas. The use of risk analysis was seen as enabling the organisation to take quantitative data evaluation and decision making techniques a stage further than had previously been the case. In essence it involved the inputting of a range of possible values, and their associated probability, for any one or all of the uncertain variables. This permitted the quantification, simultaneously, of the effect on the final outcome of any number of uncertain variables. Some such variables were known to be important from past experience. Others were identified through the use of sensitivity analysis.

Having said this, the literature on risk analysis in shipping tends to follow closely that which relates to investment appraisal in general. With the exception of the small number of applications referred to above, the literature concentrates very much on potential applications of theoretical models. Very little literature exists which describes practical approaches used in individual companies.

Maddams (1982) has considered diversification as a means of risk reduction in shipping. He

points to a number of reasons why shipping has become steadily more risky over the last twenty years. He also points to the trend towards institutional ownership, with a corresponding need for steady earnings. However, fluctuations in shipping earnings are not seen as making the industry a prime candidate for attracting funds. If this is coupled with higher gearing, it becomes clear that a more stable flow of earnings is needed. Since such earnings are unlikely to come from shipping activities they must come from elsewhere. Maddams does not see this problem affecting private shipowners in the same way. He regards it as quite acceptable for such companies to average their earnings as long as overall the good years balance the bad ones. This kind of thinking leads to diversification to protect shipping interests from the worst vagaries of excessive competition. Maddams points out that most European shipping companies have developed new shipping activities apart from their basic trades. Further diversification has extended interests into cargo related business, but also to other unrelated business, e.g. construction, brewing, property etc. The examples given by Maddams tend to support his ideas that diversification is an important part of risk reduction strategy for shipping companies. No empirical evidence however, currently exists.

Norman (1981) has considered a rather different aspect of risk reduction, possibly peculiar to shipping (or at least to transportation). This concerns risk reduction through an optimal chartering and sale and purchase policy. While this particular work is still tentative, Norman clearly considers that there are gains to be made from good timing for both chartering and sale and purchase. He also suggests that the market price of risk (at least in tankers) is fairly high, with the premium earned by spot market owners being quite large:

"This suggests that aggressive chartering policies (policies involving a substantial fraction of spot charters), combined with conservative financial policies (a low debt/equity ratio) are better than the converse."

The above ideas are interesting, and worthy of further consideration, but it is not the intention to examine this area specifically in this thesis. Having said this, the extent to which companies see these aspects as being of importance can be ascertained, which should help in deciding on the appropriate direction of future research.

6. Conclusions

This chapter has attempted to review the present state of finance theory as it relates to investment and financing decisions, and to establish the range and type of empirical evidence and criticisms relating to this theory. The main theoretical points can be summarised as follows:

- (i) The use of NPV as a means of project evaluation should yield optimal decisions in terms of the perceived objective of maximisation of shareholders wealth. IRR has problems for projects with non-conventional cash flows and in situations of capital rationing.
- (ii) Various methods have been proposed for the choice of the discount rate, based upon weighted average cost of capital, modifications to CAPM, and adjusted present value. Care needs to be taken to ensure that the discount rate chosen is appropriate for new projects, particularly where different risk categories are involved.
- (iii) The arguments regarding capital structure are many and various. The majority view appears to suggest that an optimal capital structure exists, but the problem has not been conclusively solved.
- (iv) The theory suggests that the investment and financing decisions are broadly separable, with adjusted present value being proposed where necessary.
- (v) A variety of techniques for dealing with risk have been devised.

A number of practical difficulties have been identified with regard to certain of these, notably with regard to the use of CAPM as a basis for calculating an appropriate discount rate, and the separation of the investment and financing decisions. Further questioning on methods used and the practical problems of implementation could usefully take place.

Such empirical studies as have been undertaken generally suggest increased use of the methods recommended by finance theory, but they also include a number of disturbing findings. Methods other than NPV were found to be used fairly widely, and IRR was generally preferred to NPV. Overall the empirical evidence tends to be quantitative, with relatively little qualitative research having been conducted. There is scope for more detailed questioning of this type, and on the relative significance of the various component parts of the process so as to put evaluation methods more firmly in perspective.

Finance theory has been subject to a number of criticisms, the most serious of which relate to objectives, the nature of the decision making process, the relationship between capital budgeting and

strategic decisions, and the impact of increases in environmental turbulence and complexity on the practical application of the theory. The objective of maximisation of shareholder wealth is the subject of much criticism. Consideration of the conflicts of interest between managers and shareholders indicates an opportunity for the development of alternative sets of objectives, with a consequent effect on decisions, so as to more closely achieve managerial objectives. This has implications for such things as diversification policy, capital structure and dividend policy. Different levels of managers might well have differing objectives, making the resolution of differing objectives more difficult. A managerial approach to capital budgeting, even when subject to broad constraints imposed by shareholders, may well result in rather different decisions to those implied by finance theory. Criticisms of the nature of decision making suggest a much more complex approach than implied by finance theory. The process of search, evaluation and implementation appears to be an iterative one, with a variety of inputs, of an economic, environmental, behavioural and political nature. More research appears to be needed into the overall decision making framework, and the role that finance theory has to play in it, particularly where strategic decisions are involved. Finally, increases in environmental turbulence and complexity pose practical problems for the application of finance theory. Further work is needed on decision making in turbulent and uncertain environments, and on the application of the various methods of risk analysis which exist.

Little empirical work has been carried out on capital budgeting in the shipping industry. The industry provides a rich source of material, since the shipping markets are volatile and complex, financing opportunities are considerable and risks are high. This thesis aims to assess the practical relevance of finance theory to the shipping industry, and to consider some of the broader criticisms outlined above, at least in the context of this particular industry.

Chapter 4

Review of the literature on Corporate Planning and Strategy

1.Introduction

In considering the review of the literature on this area it is important to recognise the limited aim of this thesis with regard to corporate planning and strategy. The thesis aims to identify points of overlap and linkage between finance and corporate planning and strategy, with regard to investment and financing decisions in the shipping industry. Questioning on planning and strategy was thus geared to this aim, with emphasis being placed on such things as :

- (i) objectives.
- (ii) the nature of the corporate planning process, and the period for which plans are made.
- (iii) the nature and importance of the background environmental/economic analysis supporting strategic decisions.
- (iv) the strategic issues seen as being most important to investment decisions.
- (v) the process of search, evaluation and choice of capital projects.

Discussion of these areas should provide useful insights into the process of corporate planning and strategy development in the shipping industry, and should facilitate the achievement of the aims of the thesis in this area. Nonetheless, it must be recognised that this thesis does not aim to analyse systematically the practical relevance of the various theories and supporting techniques relating to corporate strategy.

Such an approach poses something of a dilemma with regard to the literature review on corporate planning and strategy. This chapter could be confined to consideration of the literature relating to the questions identified above, or it could provide a broader context for the study, by setting out a general

overview of the literature in the area. On balance the latter approach seemed both more realistic and more appropriate, given the fairly integrated nature of much of the writing in this area. This chapter thus aims to provide a broad review of the literature in the area of corporate planning and strategy. It is nonetheless clear from the above comments that not all of this review is equally relevant to this study. The final section of this chapter thus provides an indication of the main areas of investigation on which the study concentrates, and the identification of those parts of the literature which seem likely to be of most relevance to it. A more detailed specification of the areas of investigation is provided in the next chapter, on research methodology, and in chapter 7, on the shipping company pilot study and its results.

In general, it is fair to say that the writing on corporate planning and strategy does not have the same degree of consistency as that covering finance. Some measure of consensus appears to exist with regard to the development of rational planning systems, but even here a variety of approaches can be found. Section 2 of this chapter therefore describes the way in which corporate planning systems evolved, summarises the most important aspects of these systems, and identifies the range of approaches which have been developed. Section 3 identifies and reviews the techniques commonly found to support planning systems. This is followed by a brief review of the criticisms which have been made of corporate planning systems, particularly those relating to rational systems. Details of the more important empirical studies in this area are then given. The sixth section of this chapter reviews an approach known as PARE analysis, which is an attempt to link the areas of strategic management and finance more closely together. This is followed by a review of the shipping oriented literature in the area. The chapter concludes with a summary of the literature relating to corporate planning and strategy, and the identification of those parts which are of most significance to this particular work.

2. Corporate Planning and Strategy

Vancil and Lorange, writing in 1975, said that:

"The widely accepted theory of corporate strategic planning is simple: using a time horizon of several years, top management reassesses its current strategy by looking for opportunities and threats in the environment and by analyzing the company's resources to identify its strengths and weaknesses. Management may

draw up several alternative strategic scenarios and appraise them against the long term objectives of the organisation. To begin implementing the selected strategy (or continue a revalidated one), management fleshes it out in terms of the actions to be taken in the near future." (P81)

Vancil and Lorange went on to indicate that they believed that the planning process varied considerably from firm to firm. Specifically they argued that in smaller companies, strategic planning was a rather less formal, almost continuous process, whereas for large diversified companies, informal planning was virtually impossible, given the large number of managers likely to be involved in decision making. In a later article (Lorange & Vancil 1976) they set out a number of issues on which choices or decisions must be made in designing a planning system, including such things as the communication of goals, limitations of the goal setting process, the role of the planner in relation to managers, and links between planning and budgeting. Different choices or decisions would clearly give somewhat different planning systems. However, Vancil and Lorange considered that the thought processes in undertaking planning were essentially the same for different organizations. They therefore attempted to formalize the steps in the process and to explain the purpose of each step.

Strategy formulation was seen as occurring at three different levels, headquarters, division and department, and the associated strategy and planning processes were thus labelled as corporate strategy and planning, business strategy and planning, and functional strategy and planning.

"Corporate planning, leading to the formulation of corporate strategy, is the process of (a) deciding on the company's objectives and goals, including the determination of which and how many lines of business to engage in, (b) acquiring the resources needed to attain those objectives, and (c) allocating resources among the different businesses so that the objectives are achieved."

"Business planning, leading to the formulation of business strategy, is the process of determining the scope of a division's activities that will satisfy a broad consumer need, of deciding on the division's objectives in its defined area of operations, and of establishing the policies adopted to attain those objectives. Strategy formulation involves selecting division objectives and goals and establishing the charter of the business, after delineating the scope of its operations vis a vis markets, geographical areas, and/or technology."

"In functional planning, the departments develop a set of feasible action programs to implement division strategy, while the division selects - in the light of its objectives - the subset of programs to be executed and coordinates the action programs of the functional departments. Strategy formulation involves selecting objectives and goals for each functional area (marketing, production, finance, research, and so on) and determining the nature and sequence of actions to be taken by each area to achieve its objectives and goals. Programs are the building blocks of the strategic functional plans." (P82)

Not all writers on this area agree with the above definitions. However, there does appear to be a fair measure of agreement that strategy can be characterised according to organisational level,

namely corporate, business and functional (see for example Wheelwright 1984).

The Vancil and Lorange description of strategic planning given above represents a reasonably concise summary of the state of play in the 1970s, for the better organised firm. Since that time further ideas have developed, and the world has become rather more complex and turbulent. Some firms have made further improvements, while many are not yet at the stage implied by the above description.

Gluck, Kaufman and Walleck in a more recent article (1980) found evidence of certain large organisations performing extremely well in relation to their more traditionally managed competitors. In an attempt to ascertain why this occurred they embarked on a systematic examination of the relation between formal planning and strategic performance across a broad spectrum of companies, looked for common patterns in the development of planning systems over time, and specifically examined their evolution in large successful companies. They found evidence that evolution did take place along similar lines, although at different paces. A four-phase evolution model was described.

(i) The first phase was described as basic financial planning, and was closely related to the annual budgeting process. Business strategies were rarely formalised, and emphasis was on forecasts of revenue, costs, and capital needs, and the identification of limits for expense budgets, all on an annual basis.

(ii) The second phase was perceived to be forecast-based planning. Typically this planning is initially an extension of annual budgeting in terms of time. However, forecasts often prove to be inaccurate and more advanced forecasting tools are thus sought, including trend analysis, regression models and simulation. Phase II was seen as improving the effectiveness of strategic decision making. The principal reason for this was that it forces management to face up to the long-term implications of decisions and to consider the potential impact on the business of identifiable current trends. Criticisms of Phase II concern the predictive ability of the models. Sooner or later plans based on predictive models fail. Gluck et al pointed out that such plans often fail to signal major environmental changes, which often have a considerable impact on corporate fortunes. Other criticisms generally relate to the dangers of Phase II planning becoming a *"mechanical routine"*, with consequent adverse affects on motivation, or of key issues being buried under masses of routine data. Gluck, Kaufmann and Walleck considered most long range or strategic planning systems to be in Phase II, which implies that the Vancil and Lorange description may have been premature.

(iii) The third phase, referred to as externally oriented planning, occurs when rapid environmental change makes market forecasts obsolete. Repeated errors in forecasts cause planners to look more carefully at the basic market place phenomena which are likely to lead to change. This is seen as making resource allocation *"both dynamic and creative"*. The Phase III planners now look for opportunities to:

"shift the dot of a business on a portfolio matrix into a more attractive sector, either by developing new capabilities or by redefining the market to better fit their companies' strengths." (P156)

It is this search for alternative strategies which distinguishes Phase III from Phase II. While it is a source of considerable strength it also is seen as causing a notable weakness. Gluck et al point to the danger of explicit choices being made by planners and managers, often without top-level participation. Such a danger is likely to push management into the next phase.

(iv) Phase IV, referred to as strategic management, is seen as drawing strategic planning and management together into a single process. Strategic management, according to Gluck et al, is largely accomplished by three mechanisms.

- "1. A planning framework that cuts across organizational boundaries and facilitates strategic decision making about customer groups and resources.*
- 2. A planning process that stimulates entrepreneurial thinking.*
- 3. A corporate values system that reinforces manager's commitment to the company's strategy."* (P158)

The planning process in strategic management emphasises flexibility and creativity, as well as the comprehensiveness and thoroughness implicit in earlier phases. The process must avoid becoming bureaucratic or ritualised, frequently a feature of Phase II systems. A further feature of strategic management, emphasised by Gluck et al, is the importance of the *"corporate values system"* shared by top and middle management. Considerable diversity exists in practice, but common themes typically found include such things as: the value of teamwork, leading to task oriented organizational flexibility; entrepreneurial drive; open communication; a belief in the future of the enterprise; and confidence in its ability to influence the environment within which it is operating. Gluck et al concluded that:

"as the economic system becomes more complex and the integration of single business units into multinational, diverse organisations, continues, ways must be found to restore the entrepreneurial vigor of a simpler, more individually oriented company structure. Strategic management, linking the rigor of formal planning to vigorous operational execution, may prove to be the answer." (P161)

Similar arguments have been put forward by Ansoff (1977), who used the term long range planning to describe systems very similar to those of Gluck's Phase II. He also pointed out that increased turbulence and environmental complexity make reliance on extrapolations of the past somewhat unwise, and necessitate the development of a new type of planning system, capable of coping with discontinuities. Ansoff described this new approach as *"entrepreneurial planning"*, which is a decision making logic common to the modern systems developed in recent years, including strategic planning, new venture planning, PPBS, strategic management, strategic portfolio management, strategic issue analysis, and real time strategic planning. According to Ansoff, entrepreneurial planning makes two fundamental departures from the earlier extrapolative planning techniques:

"It treats the environment in a much broader perspective. The forecasts of the future seek to discern likely significant discontinuities and changes in direction. The field of search for these discontinuities and changes goes beyond the traditional boundaries of the firm's environment to encompass technological, political, sociological, and economic trends which are relevant to the firm's future."

"It differs in the manner by which information is processed. If the evaluation of the firm's prospects makes it evident that the future of the firm's current business is unattractive ..., a search for new alternatives is instituted, their consequences are analyzed, and the best orientation is selected. This enlarged environmental awareness necessitates enlarged internal awareness. If the firm is to consider alternatives to its past activities, it needs to know its capabilities and capacities. ("strengths and weaknesses") for undertaking new departures." (P15/16)

Clearly such an approach raises questions about potential changes in both goals and objectives of a firm.

The similarity of the above arguments with those given earlier is apparent, in spite of differences in terminology. Because of the differences in terminology it is somewhat difficult to set out the generally accepted view of corporate planning, but the trends in planning are clear. Gluck et al commented on the problems of terminology and pointed out somewhat sarcastically that *"mere planning has lost its glamor; the planners have all turned into strategists"*. While some of this may have caused a certain amount of confusion it was nonetheless seen as helping to shift the attention of managers away from the technicalities of the planning process to much more serious consideration of the substantive issues affecting the long term well being of their enterprises.

More recent writings have focussed much more clearly on the newer approaches identified above.

For example, Hax and Majluf (1984) presented a methodology suggesting the tasks that have to be performed in the formulation of strategies, programmes and budgets. They defined the corporate strategic planning process as *"a disciplined and well-defined organizational effort aimed to completely specify corporate strategy"*. (P 40) The same three conceptual levels of strategy (namely, corporate, business and functional) were used as the essential layers of any corporate planning process. A series of steps were identified which were seen as providing the content of the strategic planning process.

- (i) The identification of the vision of the firm. This was seen as including an expression of the mission of the firm in terms of products, markets, and geographical scope, together with ways of achieving competitive leadership, (e.g. achieving the lowest delivered cost position, product differentiation, etc.). Strategic business units and their interactions needed to be identified, and corporate philosophies articulated.
- (ii) The development of strategic posture and planning guidelines, distilled from the vision of the firm and an analysis of the external and internal environments. Potential strategic thrusts and broad corporate performance objectives can be identified.
- (iii) The definition of a more detailed mission at the business level, in terms of products, markets, geographical scope and competitive uniqueness.
- (iv) The formulation of business strategy and broad action plans – aimed at securing a long term sustainable competitive advantage. The business strategy should be arrived at after consideration of the non-controllable forces associated with the external environment, and the internal competences of the firm. Business portfolio matrices could be of use in this area.
- (v) The formulation of functional strategies and broad action plans.
- (vi) Consolidation of business and functional strategies at the corporate level. As a minimum this was seen as addressing four issues: resolution of conflicts; balancing the business portfolio, with several dimensions of concern; defining the availability of strategic funds, debt policy, growth etc.; and evaluation of priorities for resource allocation to each business unit.
- (vii) The definition and evaluation of specific action programmes at business and functional level. This should include description; priority; estimates of costs and benefits; manpower requirements; time

schedule; individual responsible for implementation, and the procedure for controlling its implementation. Cash flow projections are frequently based on different scenarios.

(viii) The allocation of resources and the definition of performance measures for management control.

(ix) The development of strategic and operational budgets.

This methodology is not seen as being prescriptive, and Hax and Majluf recognise that there is no one way to plan, and more than one way to plan effectively. The actual planning system is likely to depend upon the type of business, managerial competence, competition, and environmental turbulence, and should be tailored to fit the corporate culture, organisation and administration.

Many more examples of books and articles can be found covering the area of strategy and related techniques (e.g. Ansoff 1965: 1969: 1979, Ansoff et al 1976, Hamermesh 1983, Andrews 1980). In general they have been helpful in focusing management attention on the development of processes which will enable strategic issues to be identified and appropriately handled. Some measure of agreement exists on the kind of steps and elements typically found in corporate planning systems. Figure 8

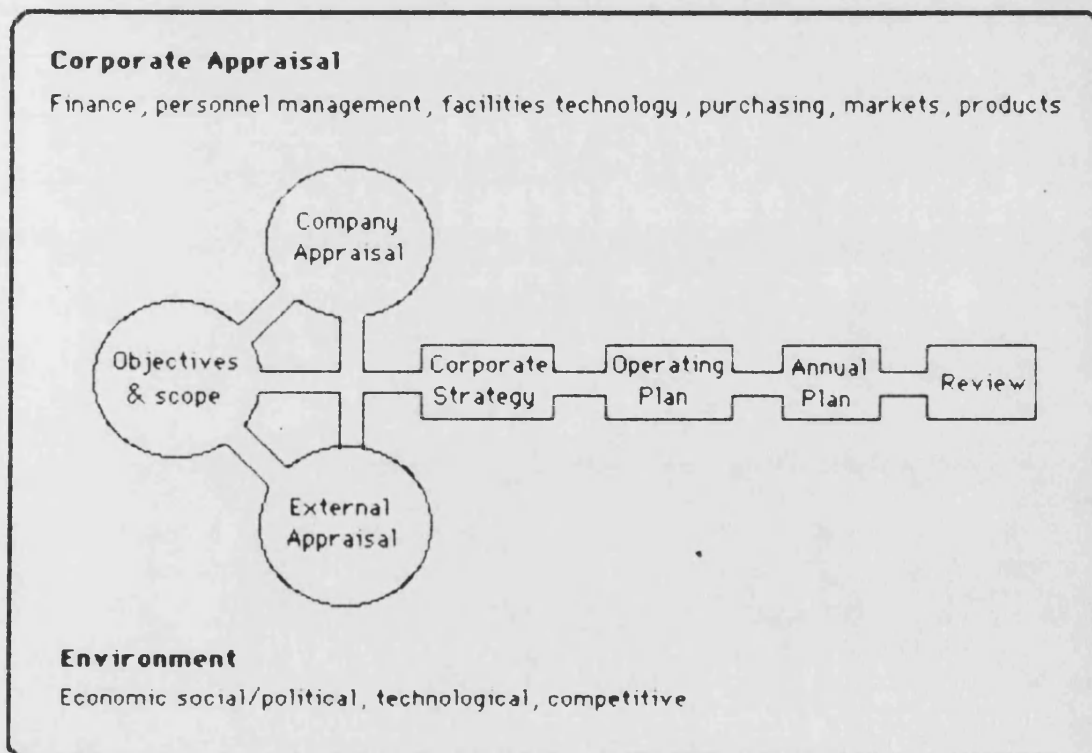


Figure 8. Basic steps in corporate planning

Source: Managing the Process of Corporate Development. Taylor 1982b P111.

represents one view of the typical steps, while the main elements of the process were identified as:

- (i) specific objectives – by company, division and function
- (ii) environmental analysis
- (iii) company appraisal
- (iv) assumptions and forecasts
- (v) alternative strategies
- (vi) integrated plans
- (vii) action programmes
- (viii) budgets
- (ix) review

(Source: Taylor 1982b: P111)

Considerable similarity can be seen to exist between these elements and the tasks of Hax and Majluf, suggesting a broad measure of agreement.

To say this however, still leaves the problem of differing approaches to planning, and differing styles of implementation. Taylor (1984) has pointed out that over the last decade new pressures in the system have resulted in a maturing and development of corporate planning practice. He argued that the result has been the evolution of a broad range of philosophies and techniques which aim to help organisations adapt to rapidly changing environments. He outlined five styles or modes of planning which have emerged.

- (i) Planning as a central control system for acquiring and allocating resources. This is seen as a rational decision making and control process, supported by techniques of analysis such as SWOT analysis, business portfolio analysis, gap analysis, extrapolative forecasting, and extended budgeting.
- (ii) Planning as a framework for innovation, i.e. generating new products, processes, markets and businesses. This is supported by programmes for such things as divestment, diversification, acquisition, new product development, and market penetration and development.
- (iii) Strategic management – the idea of planning as a means of developing both strategies and the commitment, skills and talents needed to implement them. Emphasis is placed on elements such as organisation and staff development, organisation structure, and management systems. Supporting techniques include stakeholder analysis, SWOT analysis, business portfolio analysis, etc.
- (iv) Planning as a political process, for resolving conflicts between interest groups and organisations

competing for resources, both inside and outside the business. This requires the monitoring and forecasting of social and political trends, assessing their impact on the firm, and organising and implementing appropriate action programmes. Supportive techniques may include such things as employee communication, social issue analysis, country risk analysis, etc.

(v) Planning as a means of exploring and creating the future. This involves the development of alternative futures, the assessment of the social and economic impacts of such futures and the definition of key decisions. Supporting techniques include such things as scenario analysis, delphi studies, trend analysis, simulation, and contingency planning.

Taylor saw these approaches as being compatible and complementary. The subdivision into the various approaches however, is useful in identifying the range of ideas which can now be found under the general heading of corporate planning and strategy. Nevertheless, Taylor emphasised that the techniques and approaches referred to must be seen as part of a coherent programme of change. He concluded that:

"In determining their approach to planning, the chief executive and his planning staff need to examine the different methodologies which are available to discover which system best meets their needs. They should then adapt the approach to suit their own organisation. For corporate planning systems do not come ready-made. They have to be tailor-made to fit each enterprise." (Taylor 1984: P52)

The arguments outlined above provide a broad indication of the way ideas on corporate strategy have developed over the last decade, with a measure of agreement being achieved with regard to the basic steps in the corporate planning process. Considerable differences in approach nonetheless exist. For example, an interesting discussion of the differences between an analytical approach to strategy, as compared with an incremental value-based approach, can be found in Wheelwright (1984).

Before leaving this section it is worth pointing out that strategic planning need not be confined to large organisations. Clearly, many small companies cannot afford the time or resources needed for a sophisticated system, and a simplified process needs to be devised. Nevertheless, the same underlying principles remain. For example, Linneman and Kennell (1977) have put forward a simplified ten-step approach which could be used by smaller organisations. They are particularly concerned with the problems caused when the assumed values of key variables are wrong and the chosen strategy is inappropriate. The aim of their approach is thus to develop flexible strategies by the use of multiple scenario analysis.

Thomas (1978) has considered strategy particularly in the context of service businesses, and

has identified a number of significant differences between strategic management of such businesses and of manufacturing businesses. Management should thus ensure that these differences are understood, and that the economics of the business have been analysed. Questions need to be asked about competitiveness, the cost effectiveness of operations, and pricing policy. Particular attention needs to be given to establishing the processes used to develop and test new strategies, and to questions concerning acquisitions of other companies.

3. Supporting Techniques used in the Strategic Planning Process

3.1 Introduction

In the last section a variety of techniques were identified which might be of assistance in the development of strategy. The purpose of this section is to provide a brief overview of the more commonly found techniques.

Greater attention is given to those techniques generally held to support planning as a central control system or as a system of strategic management, since the potential for links with finance theory appear greater.

3.2 SWOT Analysis

This technique involves the analysis of the strengths, weaknesses, opportunities and threats relevant to a company. It builds upon the analyses of individual business units, managerial skills, and issues such as flexibility. Care must be taken to identify reasons why particular facets of the business are regarded as strengths or weaknesses, since circumstances may change the view on these facets. The relative importance of the various facets also need to be identified, particularly in terms of a comparison with competitors. The aim should be the identification of the "*distinctive competence*" of the business, (i.e. the identification of the particular strengths which give the company an edge over its competitors and the weaknesses which are to be avoided or rectified). Some kind of equivalent analysis of the resources of competitors is frequently appropriate.

The concept of distinctive competence is seen as linking strategic analysis and strategic choice.

"... traditional approaches to strategic choice have tended to focus on identifying product/market opportunities and then viewing the company's resources as a constraint by assessing strengths and weaknesses in relation to these opportunities. The idea of distinctive competence provides a different focus for identifying and assessing future strategies since strategic choice can also be concerned with seeking out product/market areas which allow the company to capitalise on its distinctive competence." (Johnson and Scholes 1984: P112)

Some problems and difficulties exist with the analysis of strengths and weaknesses. Stevenson (1976), in a study aimed at providing insights into the process, was able to make several broad generalisations.

- (i) managers tended to treat strengths differently from weaknesses,
- (ii) the underlying steps in the process of defining strengths and weaknesses were found to be similar, though few members of management agreed precisely on their company's particular strengths and weaknesses.
- (iii) The cognitive perceptions of an individual with regard to the strengths and weaknesses of his organisation were strongly influenced by factors associated with that individual, such as position, perceived role, and responsibility. No single type of measurement or criteria was found to be relevant to the measurement of all attributes.

Stevenson concluded that the traditional notions about strengths and weaknesses required further examination, particularly in terms of dealing with procedural difficulties, and of making the analysis situation dependent.

3.3 Strategies for Growth

Much of the early literature in this area was concerned with helping companies plan their way into new businesses. For example Ansoff (1965) analysed alternative directions for growth, and emphasised the importance of expansion and diversification through market penetration, market development, product development and diversification. Similar ideas were found in the approach known as "Gap Analysis", developed by the Stanford Research Institute. In this approach management set an objective, forecast the level of achievement which is expected if no new initiatives are made (referred to as the momentum line), and then plan to fill the gap between the two. Solutions might include increases in efficiency, new products, new markets and new businesses. In many cases one of the constraints on growth is the availability of funds. Modifications to the model can be made to focus

attention on narrowing and eliminating the negative cash gap in such cases.

More recently the Boston Consulting Group (BCG) has emphasised the importance of growth and cost reduction, in the form of an experience curve. The argument is based upon the idea that as output increases economies of scale result, with a corresponding reduction in unit costs. BCG, in a survey of a large number of products in a wide range of industries, found that as output doubled so the costs of value added (adjusted for inflation) declined by a constant amount, typically 20-30% (see Henderson 1984). The strategic implication of the experience curve is that the business with the largest market share will tend to be the lowest cost producer. The market leader can thus price aggressively in relation to competitors. This approach is not without its critics (see Taylor 1982b: P116-118 for a review). Criticisms include the following. The potential for overcapacity is considerable, and other companies can learn from the experience of one particular company. The major economies of scale may accrue principally in the early years of a product's life cycle (Hall and Howell 1985). Indeed, the evidence that expanding volume can produce dramatic reductions in cost is limited. The importance of understanding likely reactions from competitors is high. Flexibility may be lost as a result of a commitment to long production runs and standard products with a consequent increase in the risk of the business should the market or the associated technology change. The theory says little about markets which are not competitive, but oligopolistic, monopolistic, or subject to government or regulatory intervention or control.

3.4 Business Portfolio Matrices

Portfolio matrix analysis is basically an attempt to devise some kind of systematic procedure for generating and choosing strategic alternatives. A number of different approaches have been developed. All require an understanding of ideas on product or business life cycles, which generally suggest four stages of evolution, namely embryonic, growth, maturity and aging or decline. Five matrices are outlined in this section, in terms of components and strategic recommendations. Useful reviews of these can be found in Marshall (1985), Macmillan (1986), and Taylor and Hussey (1982).

The BCG share-growth matrix The BCG basically related differences in unit cost to differences in market share. This enabled a linkage to be made between cash generation and relative market share. When market share is placed on a matrix with cash use, seen to be dependent on the market growth

rate, the share-growth matrix results, as shown in Figure 9.

		Market Share	
		High	Low
Growth	High	★ Star	? Problem Child
	Low	₹ Cash Cow	X Dog

Figure 9. The BCG share-growth matrix

When such a model is used the businesses within a company are placed in their appropriate box, which can then be used to indicate an appropriate strategy. "Stars" are seen as both high share and high growth. "Cash Cows" (frequently former stars) generate substantial funds but have limited reinvestment or growth prospects. "Question marks" represent low shares of high growth industries. Typically they require substantial funds for reinvestment to maintain market share, yet generate relatively poor cash flows. The end result is thus likely to be a negative cash flow, with the result that relatively few such businesses can be supported. "Dogs" have low market share and low growth. Many such businesses are likely to become cash traps, and consideration ought to be given to their divestment. The goal, according to BCG, is the achievement of a balance of businesses, with the cash being generated from cash cows and the liquidation of dogs being used to support the stars and selected question marks.

Certain dangers exist in the use of a technique such as that outlined above (see Marshall 1985). The matrix and its associated labels may be used in an unduly simplistic way. In particular the matrix ignores the impact of competition. The experience curve and the relative market share-profitability relationship may not represent a useful description of competitive advantage. For example a firm cannot benefit from the experience curve if little value is added by production. Exogenous cost advantages, which can include things such as shared experience, low cost inputs (or subsidies), product

differentiation, etc. may also provide further problems for the curve. Any such advantage may well allow a low share business to earn very high profits. New products may also eliminate experience curve competitive advantages. Other more general criticisms of portfolio matrices will be made later.

Hax and Majluf (1983) have shown that most of the dangers and criticisms have been recognised, and that BCG have developed a further matrix based upon two different dimensions; the size of the competitive advantage and the number of unique ways in which that advantage can be achieved. Four categories of business are recognised, namely *"volume"*, *"stalemate"*, *"fragmented"* and *"specialisation"*. The most appropriate strategy is different in each category, and is dependent upon the relationship between return on investment and market share.

Business Strength - Industry attractiveness Matrix

This matrix, developed by McKinsey (1978) from early work at General Electric, works by positioning strategic business units on a three by three matrix measuring business strength and industry attractiveness, with rankings of high, medium and low. The matrix recognises that more factors than market share and growth are important in strategy development. It is shown diagrammatically in figure 10.

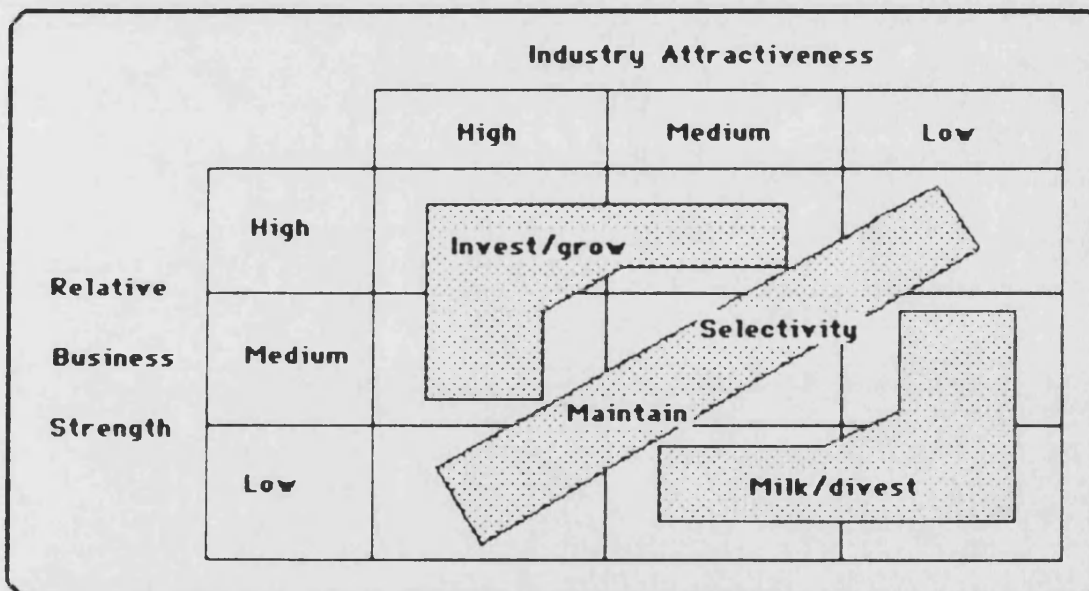


Figure 10. The business strength - industry attractiveness matrix

This matrix is highly qualitative, since business strength and industry attractiveness need to be established. Business strength is generally held to be dependent on market share, relative share and rate of growth, technological skill, product and process sophistication, profitability, brand loyalty and

managerial capabilities. Industry attractiveness depends on such things as the size and growth of the market, industry profitability, ease of entry, degree of competition, investment intensity, and the availability of labour and materials. As with the share-growth matrix the position in the matrix is associated with a particular strategy, although only three major strategies result, as can be seen from the figure.

Strong criticisms of this matrix have been made on the grounds that it is vague, since the axes can mean whatever any user wants them to mean (e.g. Channon and Jalland 1979). Hence the positioning of a business is much less precise than with the BCG approach, where both axes are quantifiable. Nevertheless McKinsey's approach can be seen as a useful tool for debating strategic resource allocation, even if it is not precisely quantifiable.

Directional Policy Matrix

This matrix, developed by Royal Dutch Shell (1976), is a three by three matrix with axes measuring competitive capability and prospects for sector profitability. Each variable was assigned a score giving an effective range of poor to excellent. Shell defined competitive capability in terms of market position, production capability and product research and development. Prospects for sector profitability were defined in terms of market growth rate, market quality, industry feedstock position and environmental aspects. Different industries would require more meaningful factors to be used, but the principle remains. As with the other matrices, the relative positions of the strategic business units can be plotted on the matrix, the framework for which is shown in figure 11. Resultant strategies can be seen from the diagram.

		Prospects for sector profitability		
		Unattractive	Average	Attractive
Company's competitive capabilities	Weak	Disinvest	Phased withdrawal Custodial	Double or quit
	Average	Phased withdrawal	Custodial Growth	Try harder
	Strong	Cash generation	Growth Leader	Leader

Figure 11. The Directional Policy Matrix

The major criticisms are based upon the difficulties of associating scores to variables.

Other Matrix approaches

Sutton (1980) developed a strategic planning matrix based upon the Directional Policy matrix. It was a three by three matrix with the axes measuring competitive capability and general performance prospects. General performance prospects depend upon the structure of the market. Competitive capability depends upon competitive strengths.

Rothschild (1976) has developed a financial ratio matrix based upon PIMS results (described in the later section on empirical studies). The axes measured return on sales and return on investment.

General criticisms of Portfolio Matrices

Portfolio matrices have been the subject of considerable criticism in recent years. For example, Marshall (1985) concluded that:

"... all portfolio matrix schemes are little help in selecting which businesses the firm should invest in. They are flawed in that they measure the attractiveness of a particular business to the firm and not necessarily the value of additional investments." (P77)

Coates (1983) in discussing both the theoretical and operational problems of portfolio matrices identified a number of particular problems including:

- (i) The strategies proposed by the various models can be different.
- (ii) All of the models require the firm to be divisible into separate business units, which is frequently not practicable. Products sharing similar technology, or with synergistic advantages, do not fit easily into the models.
- (iii) The portfolio models assume that the dominant firm earns the highest profit, an assumption on which there appears to be relatively little evidence. A particular problem is that it is possible that market characteristics may have a significant influence on profitability, in that unprofitable industries will offer low returns even to dominant firms, while profitable industries will offer substantial returns even to the mediocre. Product differentiation and market segmentation may also pose problems for the assumption of a link between market demand and profitability.
- (iv) Industry attractiveness can be seen as depending upon rather more than life cycle. Capital intensity may well be important. Also it has been noted that some firms have reaped high returns from strategies involving heavy investment in declining industries. (Porter 1980)
- (v) A further basic assumption of the portfolio matrix approach is that there is a limit to the funds

available from the market for investment. Whether this is justifiable is unclear.

- (vi) Theoretically, investment funds should be used so as to equate marginal returns on each unit. Hence consideration of the marginal return of each investment is needed if an optimal allocation of investment is to be achieved.
- (vii) Collusion could lead to the maintenance of relatively unattractive business units where monopoly profits could accrue.
- (viii) Liquidation values may well have a considerable impact on the maintenance/divestment decision.
- (ix) Little quantitative attention is paid to risk, particularly the CAPM type of approach.
- (x) The definition of a business unit is difficult, but crucial to the usefulness of a portfolio model. A narrow definition would artificially enhance the position of a business, whereas a broad definition would bias the position downwards.
- (xi) The implementation of a portfolio model requires detailed business unit information to ensure correct positioning on the matrix.
- (xii) The portfolio models do not help in choosing actual projects to accomplish a particular strategic objective.
- (xiii) Some problems can arise which make individual strategies suggested by the models either difficult or invalid. For example, in oligopolistic industries attempts to increase market share may well destroy pricing coordination. Anti-trust legislation or governmental influence may be important.

Hamermesh (1986) has argued that the most serious drawbacks of portfolio planning arise in the area of mature industries, and identified problems of low employee morale and motivation. He also saw it as sometimes limiting the strategic thinking of managers, leading to conservative strategies. Earlier research (Hamermesh and White 1984) had established a strong relationship between the organizational and administrative structures of a business unit and its performance. Portfolio techniques focus on industry and competitive conditions, and ignore those other important relationships. Nevertheless, despite its drawbacks, Hamermesh saw portfolio planning as an important tool in most large, diversified companies. However, if the approach is to be used effectively its limitations need to be fully recognised.

Derkinderen and Crum (1984) have raised particular problems and limitations of the share/growth technique from a financial strategic perspective. They have expressed concern as to the extent to which the technique helps to establish a viable link between the company and its environment

which is both financially and strategically sound. An alternative matrix, known as Potential and Resilience evaluation, is discussed, which provides a supplement emphasising the financial-strategic aspects. Given the importance of the ideas to this thesis PARE analysis is discussed in more detail in a later section.

3.5 The Stakeholder approach to strategy

While first mentioned in the 1960's in the work of the Stanford Research Institute, the stakeholder concept did not become an important part of the literature on strategic planning until the 1970's. In 1971 Taylor argued that the importance of stockholders would reduce, with businesses being run for the benefit of other stakeholders too. Various other writers explored the implications of the approach during the 1970's and 1980's (e.g. Haselhoff (1976), King and Cleland (1978), Hussey and Langham (1978)). Recently more fully worked out approaches to strategic management using a stakeholder approach have been developed (e.g. Freeman 1984). In essence the stakeholder theory suggests that a business has obligations to all the individuals and organisations with which it has transactions and relationships. Management cannot simply aim to satisfy the needs of shareholders and customers and ignore other interest groups.

An important implication of stakeholder theory is that

"Corporate strategy is concerned not simply with producing a return on the shareholders' capital and delivering satisfactory products to customers, but also achieving social acceptance in the community, ensuring a continuing and uninterrupted supply of key raw materials and components, influencing government policies, and of course ensuring that the work force and the whole management team are motivated and committed to the company and its policies."

"The 'stakeholder approach' suggests that management should be searching for a set of policies for research, production, marketing, finance, personnel and 'public affairs' which are compatible with each other and which manage to satisfy the minimum requirements of the stakeholder groups, giving priority to those interests which, for various reasons, seem to merit more attention than the rest." (Taylor 1982b: P126)

A second important implication of the stakeholders theory is that corporate strategy cannot be expressed solely in terms of products and markets.

3.6 Techniques for Political Planning

The ideas developed in the last section, together with the general increase in the activities of

governments and pressure groups, have led to the development of corporate planning as an inter-organizational process involving relationships with those other organisations and interest groups (both inside and outside the business) whose decisions and actions seem likely to have a significant impact on the firm.

It has been argued that:

"In the 1970's there has been a dramatic decline in managerial power and authority, and many planning failures have been caused because management are over-estimating their power to carry through their decisions. A manager can only plan managerially to take decisions which are under his own control. For decisions which are made by other groups or individuals outside his control he must plan politically to influence their decisions." (Taylor 1982a: P69)

Taylor went on to argue that *"Corporate Affairs"* or *"External Relations"* should be the subject of plans in the same way as any other functional area. Particular attention should be paid to government and unions. While the form that political planning takes is likely to vary from business to business, components might include:

- (i) political mapping
- (ii) analysis of political networks
- (iii) identification of the political agenda
- (iv) the assessment of likely political response
- (v) organised lobbying
- (vi) communications programmes
- (vii) economic impact studies
- (viii) futures forecasts

3.7 Futures research

Increasing use is now being made of scenario analysis and other future research techniques to cope with the changes which now seem to occur fairly regularly. A scenario is basically a hypothetical set of events which has been constructed so as to focus attention on causal processes and critical decision points.

"Scenarios are not supposed to provide an accurate picture of the future, but to challenge the imagination: to encourage managers to plan, not just for the most likely future but also for other alternative futures which are less likely." (Taylor 1982c: P217)

A particularly useful review of scenario analysis is to be found in Taylor (1982c)

Scenario planning is seen as a way of helping managers become more flexible by the use of such approaches as:

- (i) environmental scanning, so as to identify any signals, however weak, which might indicate problems to come
- (ii) sensitivity analysis, so as to ensure the development of plans which are reasonably robust under differing conditions
- (iii) contingency planning, so as to be prepared for crises
- (iv) risk analysis, so as to make managers more aware of the threats to their business
- (v) more flexible investments, so as to build more flexibility into operations.

Scenario analysis is seen as being particularly important in times of social and political change.

A number of techniques have been identified as being useful in writing scenarios and in developing views of the future. These include such things as:

- (i) trend analysis
- (ii) computer simulations
- (iii) decision analysis
- (iv) sensitivity analysis
- (v) delphi studies
- (vi) impact analysis

The philosophy of scenario planning is well summarised in Taylor (1982c), as follows:

"The futurology or futures research movement is one of the most significant developments to affect planning in the last decade. Futures research offers a perspective complementary to that of the 'control system' school. The controller starts from where the system is now and he tries to develop a guidance system which will take it in a certain direction. He uses techniques such as budgetary control and forecasting approaches based on extrapolation.

"Futures research or scenario planning starts with a vision of the future and asks 'What different futures are feasible?', 'What will happen to our enterprise in these new conditions?' The futures researcher envisages not one future but a number of alternative futures. And he aims to produce strategies and plans which will be robust enough to enable the organisation to survive and prosper under a wide range of conditions. He uses qualitative techniques which explore the future, taking the opinions of specialists, examining the possible impacts of certain events and constructing scenarios describing futures which could happen given certain assumptions." (P225)

4. Criticisms and limitations of Rational Planning Systems

As has already been made clear, a number of alternative approaches to planning and strategy have been developed. Many of the alternative approaches identified were based upon general dissatisfaction with the idea of planning as a central control system, an approach which has tended to dominate management thinking about corporate planning. A number of more general criticisms and concerns remain, generally relating to problems associated with the use of rational planning systems. An outline, albeit brief, of these criticisms is given below. Given the nature of this thesis a detailed discussion was considered unnecessary. This is not to deny the undoubted importance of such criticisms, but reflects a recognition that the links between finance and corporate strategy are more likely to be found in approaches based on rationality.

Bryman (1984) has provided an interesting review of the arguments concerning rationality. The rational system model of organisational analysis, seen as being exemplified by the writings of Weber (1964) and the Classical Management School, basically identified the organisation as an instrument designed to achieve a specific goal or set of goals. A more modern approach to rationality was seen in the development of contingency theory. As has already been pointed out, recent years have seen dramatic changes in the environment within which most companies operate, and in the size and complexity of organisations. This in turn has led to differences in strategic management practices. Contingency theory is based upon the idea :

"that there are many differing organizational and environmental factors which influence strategy and seeks to determine a relationship in which organizational strategy is dependent upon specified environmental conditions. ... The contingency approach to strategy suggests that, for a certain set of organizational and environmental conditions, an optimal strategy exists. Contingency approaches are based on the idea of contingent relationships between an independent variable: environmental conditions; and a dependent variable: the organization's strategic response." (Harvey (1982: P81))

Steiner and Miner (1977) argued that:

"The appeal of contingency theory is that it appears to provide a middle ground between the extreme situationist view that every situation is unique and that therefore generalisation is well nigh impossible, and the view that organizational functioning can be fully explained in terms of broad general truths and principles." (P 774)

A number of studies have provided useful insights into this kind of approach. Lawrence and

Lorsch (1967) concluded that organisational design must reflect the particular tasks the company is trying to perform. High performers in each industry are those which achieve the best fit with their environment. Lawrence and Lorsch also showed that high performing firms in an uncertain environment were associated with greater decentralisation than low performing firms. In predictable industries the high performers were more centralised. Cable and Steer (1977), in a British survey, found that organisation structure was a significant predictor of return on assets, broadly confirming the results of an earlier study by Poensgen (1974). Clifford (1973) studied rapidly growing companies and concluded that the 'right' structure for each company at any point of time is a function of: corporate objectives and plans; the number of distinct businesses making up the company; the key factors for success in each major line of business; company organisational principles; and management capability, style and personality. Most of the work to date relates to questions of structure, though several have attempted to identify those variables of most importance to levels of performance (for example Glueck (1972)). The PIMS study has also identified a number of the apparently important variables in profitability determination. This study is dealt with in more detail in the next section.

Contingency theory is still in its infancy, and it is likely to be some time before a comprehensive contingency theory is developed which proposes specific strategies, structures and systems for each situation. Steiner and Miner (1977) have put forward a limited domain theory which should assist in the development of such a theory. It is suggested that key variables can be established for each domain, with a comprehensive theory eventually emerging as the number of domains increases. An industry based study would clearly be consistent with this approach.

Having said this, it must be recognised that contingency theory has been fairly severely criticised. For example, Miller (1981) has pointed to problems with many of its underlying assumptions. His criticisms were summarised as follows:

"The assumptions about the adaptive process entail a very much simplified characterization. There are specification errors, unwarranted assumptions of linearity in relationships, the search for one best method of adaptation, and a deterministic perspective of causality. The results are often conflicting and fragmented findings." (P8)

Miller nevertheless went on to argue for a new "Gestalt" approach, in an attempt to find more richly described natural clusters among a broad variety of variables covering the environment, the organisation and its strategies. Other writers (e.g. Bryman 1984) have seen contingency theory as being essentially underpinned by ideas on rationality, albeit using a systems approach, so all the

problems which are associated with rationality remain.

Bryman saw criticisms of rationality as having four perspectives, although he emphasised that his list should not be seen as exhaustive or mutually exclusive. The four perspectives were identified as *"garbage can"*, *"institutional"*, *"political"* and *"Marxist"*.

The garbage can approach has been outlined by Cohen et al (1972) and March and Olsen (1976). Cohen et al argued that it may be useful to move away from the concept of the organisation as a static structure to the examination of organisations in which goals are hazy and participation is fluid. As Bryman pointed out, the departure of this model from the rational model is *"quite extreme"*. The ideas of Weick (1976) on the loose *"coupling"* of various aspects of organisations are largely in line with the garbage can approach. Both Cohen et al and Weick suggest that an excessive concentration on such things as unity, integration, co-ordination and consensus, may be inappropriate, and may blind decision makers to many important aspects of the organisation. As pointed out by Bryman,

"The view with which the reader is left after an introduction to the views of these writers is a world in which organizational elements are much less tidy and co-ordinated, yet more fluid, than the rational model can embrace. The image of the rational actor which underpins its world-view begins to disappear from sight." (Bryman 1984: P3)

The institutional approach (see for example Meyer and Rowan 1977) basically argues that apparent rationality can be explained by the desire to achieve legitimacy in the eyes of the world at large. Rational structures and practices serve ceremonial and symbolic functions, and signal to the external environment that the organisation is legitimate and thus worth support and resources. Some measure of empirical support exists (e.g. Meyer et al 1981). The institutional approach rejects the rational approach since it dismisses the suggestion that formal organizational structures are necessarily designed with the achievement of specific goals in mind.

The political approach basically puts internal politics at the centre of organizational life. (See e.g. Pettigrew 1973; Pfeffer 1977, 1978, 1981; Mintzberg 1985). This approach emphasises such things as influence, coalitions, and techniques useful for enhancing one's position in the frequent scramble for resources (Pfeffer). It moves away from the view of organisation structures as externally imposed to a focus on structures in a more or less continuous state of flux. The relationship between conflict in organisations and internal politics is clearly important, with executives playing a variety of *"games"*, depending upon circumstances (Mintzberg 1985). The main reasons for the use of games appear to be related to such things as: the resistance to authority; the building of a power base;

the defeat of a rival; and the changing of the organisation. The impact of conflict on an organisation may be considerable, and may endure for some considerable time. Mintzberg (1985) has argued that there are three basic dimensions of conflict in organisations – intensity, pervasiveness, and duration. He further suggested that this implies four basic forms of political arena, namely confrontation, shaky alliance, politicised organisation and the complete political arena, with these being dependent on the three basic dimensions referred to above. The relationship between these four types of political arena can then be put in context by considering the way in which conflict arises, develops, and is eventually resolved, and a process model set up. The implications of such a model for decision making may well be considerable, and the model may predict courses of action quite different to those implied by the supposedly more "rational" approach.

The Marxist approach represents the fourth perspective in terms of criticisms of the "rational" model. Criticisms of traditional organisational analysis generally relate to the way in which existing organisational arrangements have been accepted; the way it has adapted to the interest of administrative elites; the fact that social class is not included; and to the fact that it is ahistorical (see for example Goldman 1978; Benson 1977; Salaman 1979). The Marxist approach has little in common with either the rational approach or the other three approaches identified above. Basically the emphasis appears to be on the part that organisational arrangements play in societal structures, and not on their implications for efficiency.

Bryman (1984) has pointed out that each of these four perspectives is antithetical to the rational model. He has also argued that in other areas, such as economics, there have been slight shifts away from the rational choice approaches. The postulate of economic man is seen as the source of some disillusionment. Meredith (1984) has argued that the "decision oriented" viewpoint of management science rests upon false assumptions, and embodies a philosophy which may be detrimental. Attention should be focussed rather more on "mess analysis", including problem identification, data interpretation, and transient problem behaviour analysis. Model design and analysis should be de-emphasised and situational.

In the area of corporate strategy similar examples of changes in emphasis can be found. One particularly interesting approach has been developed by Quinn (1977, 1978, 1980). In a series of articles Quinn cast some doubts on the merits of the formalised textbook type of approach to planning and strategy formulation of the type discussed in earlier sections, arguing that it tends to focus too

much attention on quantitative factors, and too little on the qualitative, organisational and behavioural factors which often determine success. Quinn has argued that executives should not, and do not, follow such an approach. He suggested that they blend formal analysis, behavioural techniques, and power politics into a cohesive, step by step movement towards the achievement of broadly conceived ends, with further refinement occurring as new information appears. This process is referred to as *"logical incrementalism"*. Quinn's research suggested that such a process is in accord with reality, in that managers consciously and proactively move forward incrementally, with strategy evolving as events unfold. It should not be seen as "muddling through". Nor should it be seen as being inconsistent with formal planning systems. These are seen as serving a number of essential process functions, and as, in a sense, institutionalising incrementalism. However, Quinn argued that the planning process is rarely the source of key issues.

Similar pleas for a more broadly based approach to strategy can be found elsewhere. For example Walker Lewis (1984) emphasised the importance of the creation of an organisation and culture capable of systematically integrating a wide range of different areas of expertise. Drucker (1985) pointed to the need for a commitment to the systematic practice of innovation. Lenz and Lyles (1985) conducted a study in which it became clear that the strategic planning process could easily become *"inflexible, formalised and excessively quantitative"*. They pointed out that such systems could develop a degree of inertia which was capable of stifling creativity and frustrating managers. Undue formality and rationality were seen as the problems, and it was suggested that this could be avoided by the cultivation of organisational values, the incorporation of assumption-testing procedures, and periodic audits of the planning process. Bhide (1986) has argued that in many cases high profits come from superior execution or forceful opportunism, not from structural competitive barriers. He emphasised the importance of vision, but pointed out that it is only as good as the energy, resourcefulness, and professionalism of the organisation. Gluck (1984) has argued that strategic plans frequently fail to affect the lower level decisions which determine success or failure. Again the importance of vision and leadership was emphasised. The vision of good companies was generally seen as being based not only on a clear notion of competitive markets but also on an understanding of how economically strong and sustainable positions can be maintained in these markets. Gluck saw vision as being grounded in an understanding of the industry, the competitive dynamics, and company capabilities and potential. In building capability experience, judgement and commitment were seen as being more

important than standard analytical or methodological approaches.

Hayes (1985) has identified an increasing number of complaints about the harmful aspects of strategic planning systems, even when it is functioning properly. Hayes argued that:

"... under certain circumstances, the methodology of formal strategic planning and, even worse, the organizational attitudes and relationships that it often cultivates can impair a company's ability to compete." (P112)

The traditional strategic planning process was seen as being based on an *"ends-ways-means"* model, with the establishment of objectives (the ends) being followed by the development of a strategy (the ways) for achieving them, and the marshalling of the resources (the means) needed to implement the strategy. Hayes questioned whether this model was always appropriate. Particular areas of concern were the possibility of goals being set which are too short term or too quantitative; concentration on modes of thinking which are based on forecasts rather than visions; undue emphasis on structural, rather than behavioural means for the achieving of objectives; and excessive bureaucracy, leading to rigidity of plans. An alternative approach based on means-ways-ends was examined, with the general idea that capabilities should be built, and plans developed in order to exploit these capabilities. Such an approach was seen as being particularly useful when the competitive situation is unpredictable and changing. Organisations adopting such an approach rely for their success on their ability to exploit opportunities as they arise, their ingenuity, their capacity to learn, and their determination and persistence. Success is likely to be based on an incremental approach, but requires the development of expertise and adaptability at low levels.

Various papers have been written by practising planners, which have made comments along the same lines as those outlined above. Particularly interesting papers are those of Robinson (1986), Blass (1985), Hussey (1984), Wernham (1984) and Carpenter (1986). These papers made it clear that many of the criticisms identified are now recognised by practising planners, and that actual strategic planning systems are continuing to develop along these lines.

Brunsson (1982), in a particularly interesting analysis of the irrationality of much decision making, argued that rational decision making affords a bad basis for action, since some irrationalities are necessary requirements for organisational actions. Brunsson pointed out that in spite of continued emphasis on normative research supporting rational decision making, empirical research has found ample evidence of decision making processes which appear irrational by the normative standards. These irrationalities were not confined to insignificant decisions. Three common ways of explaining this

irrationality were identified.

- (i) The people studied are not clever enough to behave rationally.
- (ii) Certain types of irrationality represent inherent characteristics of human beings, difficult to change by training. Consequently not even experts can be fully rational.
- (iii) There are practical restrictions on rationality. In real decisions values, alternatives and predictions interact, and decision makers have either incomplete information, or more than human beings can grasp. Such a view, according to Brunsson, implies that normative research should design systems for gathering and processing data.

Brunsson argued that these explanations cannot be said to be inherently wrong, but that there is much evidence that they do not suffice. Hence if actual behaviour is to be understood, other explanations are needed.

Brunsson then went on to argue that an *"action perspective"* would be more fruitful for understanding large areas of organisational behaviour. He argued that the decision-making perspective failed to recognise that practitioners do more than make decisions. Making a decision was seen as a step towards action. A decision is not an end product. Practitioners get things done, and induce others to act. An action perspective makes it easier to see

"... that there exist both decisions without actions and actions without decisions. Some actions are not preceded by weighing of objectives, evaluating of alternatives or choosing; and decision processes and decisions do not always influence actions, particularly not when the actions precede the decisions. On the other hand, decision processes often comprise some of the processes associated with actions ..."

"In fact, the very relationship between decision making and action helps explain why decisions deviate from normative rationality. Since decision processes aim at action, they should not be designed solely according to such decision-internal criteria as the norms of rationality; they should be adapted to external criteria of action. Rational decisions are not always good bases for appropriate and successful actions." (P32)

If decisions are to initiate action, they must incorporate cognitive, motivational and commital aspects.

The stronger the expectation, motivation and commitment expressed in a decision, the better that decision as a basis for action. Hence action can be influenced by the decision process itself. The implication of this may well be that the most effective decision processes are quite different to those implied by the rational decision making approach. For example, few alternatives should be considered, only positive consequences of the chosen actions should be considered, and objectives should not be formulated in advance. The consideration of multiple alternatives, or negative consequences of

decisions, were both seen as increasing uncertainty, which in turn reduces motivation and commitment. For producing action, it was considered better to start from the consequences of decisions and to invent the objectives afterward. Predicted consequences were judged as good because they can be reformulated as desirable objectives.

In summing up, Brunsson recognised two kinds of rationality, decision rationality and action rationality, which correspond with the two problems of choosing the right thing to do, and getting it done. The two kinds of rationality serve different purposes, and imply different norms. Difficulties of reconciliation may exist because rational decision making processes may well be irrational from an action perspective. Ideologies were proposed as a means of solving the dilemma.

An ideology was perceived as some knowledge, perspectives and/or attitudes which persist over time, generally shared by individuals within an organisation. Organisational Ideologies were seen by Brunsson as being closely interrelated with decisions, since they make it easier for agreement to be reached on objectives, alternatives and outcomes. They offer short-cuts to decision makers by permitting the shortening or elimination of some steps in the process. Ideologies may even substitute for decisions, where agreement and co-ordination arise as a result of similar perceptions, expectations and values. For either of these to occur, however, Ideologies need to be clear, and to change slowly. Where rapid environmental change occurs such Ideologies might well prevent the kind of changes needed to cope, presenting something of a dilemma. Brunsson argued, however, that if change actions are preceded by shifts in Ideologies, they can attract enough support to be achieved. He quoted Jonsson and Lundin (1977), who found that organisations jumped from one dominant ideology to another. The dominant ideology was seen as being likely to be strong under normal conditions, and to be questioned only during crises. When faith in the dominant ideology is lost it will be replaced by another.

Various other writers have attempted to qualify the arguments on rationality, to soften its impact. Reference has already been made to the idea of bounded rationality. Other ideas, such as limited rationality, deliberative rationality, and selective rationality, have also been raised (for a review of this area see Bryman 1984). Perhaps even more important is the fact that different standards or criteria of rationality may exist within organisations (e.g. Pfeffer 1977, Weick 1969). Under such instances the focus of the concept of rationality would need to change to the divergent rationalities which might be found in an organisation. Such a view has much in common with the political perspective on organisations identified in earlier sections. It has much to commend it, not least because

It implies that the idea of rationality is still useful, and operates at a number of levels. Bryman quoted the empirical work of Bower (1972) as providing credence to both a politicised approach to organisations and the notion of multiple rationalities. It needs to be recognised that rational decisions at the level of the individual decision maker do not necessarily lead to rational decisions at the level of the organisation.

The above ideas are interesting, and pose real problems for the concept of rationality and hence for both finance theory and much of the theory relating to corporate strategy. Clearly many criticisms of rationality have been made, and a high degree of scepticism exists about rational models of behaviour. However, the criticisms take a variety of forms, and many can be seen as providing a rationale for broadening the process of corporate strategy to include other dimensions, particularly behavioural and political. Certainly the criticisms do not seem to have changed fundamentally the views of many writers on corporate strategy, although greater awareness of the problems of implementation now exist. By way of example, it is interesting to note that Ansoff (1984), in predicting trends in strategic management, included a number of propositions which appear to have been heavily influenced by the kind of criticisms made. These included:

- (i) the rapid development of theoretical insights into strategic behaviour, which will be useful, among other things, for the development of the contingency perspective;
- (ii) the increased use of systematic approaches that are specifically tailored to the needs of each individual firm;
- (iii) the increased use of what Ansoff describes as the strategic learning mode, which implies a gradual commitment to ventures, blending learning by analysing with learning by doing;
- (iv) the increased use of a multi-capability design approach, enabling firms to remain strategically responsive and competitive in a variety of different environments;
- (v) the development of concepts for managing mature business areas;
- (vi) the increased blending of technological and socio-political variables with economic and competitive variables;
- (vii) an increased concern with managing in complex organisations.

Perhaps the greatest impact of the criticism of recent years is in the recognition that strategic planning must be seen as being a completely integrated part of management, and not something which is separate and self-contained. (See for example Steiner 1983; Taylor 1986.)

5. Empirical work on Corporate Planning and Strategy

Reference to certain empirical work on corporate planning and strategy has already been made in previous sections, particularly that relating to critiques of rational planning. The purpose of this section is to provide an overview of empirical work on the use and usefulness of systems of corporate planning and strategy.

Denning and Lehr (1972) in a survey of the top 300 U.K. companies, found that only a small percentage of British companies had introduced long range planning by 1967, with most systems having been introduced between 1962 and 1967. By the mid 1970's Grinyer and Wooller (1975) and Higgins and Finn (1977), had found evidence that planning and modelling systems were well established in the large companies, but were still rare among small and medium companies. Since that time far greater use of planning and modelling systems has been made, with substantial growth in the number of companies using financial modelling (see Grinyer 1983). In the U.K. studies it is interesting to note that concerns with the effectiveness of formal planning systems were identified as early as 1974 by Grinyer and Norburn. They concluded (*inter alia*) that the important decision making process is informal and political, and that formal planning systems can do no more than provide a framework for the real, political decision making systems. Al-Bazzaz and Grinyer (1980) perceived a further swing towards greater dissatisfaction with formal systems from 1974, but noted that the calls for greater informality generally came from companies with the greatest experience of planning. They also argued, from their evidence, that a contingency approach to the design of corporate planning systems is required, to ensure that the design of the system best matches its needs.

Wills and Beasley (1982) conducted a survey into the use in the U.K. of a number of the techniques typically associated with strategic planning, including experience curves, PIMs and various business portfolio matrices. Out of 55 replies 23 companies indicated that they did not use any of the techniques, while 28 indicated that they had used or still used one or more of the techniques. A number of interesting observations were made by respondents (e.g. the fact that experience curve benefits did not just happen, they had to be worked at; the need to back up the share-growth matrix with sound financial analysis; the usefulness of PIMs in considering acquisitions.) Wills and Beasley concluded that, of the companies using the techniques considered, many found them a valuable aid to their strategic

planning.

In the United States a variety of studies have provided evidence of the relative use of corporate planning systems, and several are referred to below. There appears to be little doubt that systems of corporate planning and strategy were generally adopted earlier in the U.S.A. than in the U.K., and their use is now widespread. For example, Higgins (1985) in reviewing trends in corporate modelling, noted that by 1979 nearly every Fortune 1000 company was using a corporate simulation model. A 1982 study (Klein) reported that 86% of a sample of 204 organisations were using corporate models. Various other studies are referred to below, which lend support to the view that systems of Corporate planning and strategy are well developed in the United States. Certainly Steiner (1983), in assessing the state of strategic planning in the United States, was able to give fairly high marks to approximately two-thirds of the criteria which he had established as being necessary for first rate strategic planning systems. He concluded that formal strategic planning in the United States had been immensely improved in recent years, in spite of a highly uncertain and turbulent environment, but that there was still much opportunity for improvement.

With regard to the relative usefulness of strategic planning, a number of studies have been undertaken over the last 15 years, which attempt to establish relationships between planning and performance, or to establish effective strategic actions. Greenley (1986) has recently reviewed a number of these studies. He refers to nine such studies, five of which concluded that companies which utilise strategic planning achieve higher levels of performance than those which do not. However, the other four studies identified did not claim any such relationship. Greenley identified a number of methodological problems with the surveys, and concluded that the research is in fact far from conclusive in establishing a relationship between strategic planning and performance. He further argued that although there is a strong a priori case that strategic planning provides a range of both advantages and intrinsic values, empirical evidence is lacking to substantiate them.

One of the most significant of the studies in this area was the PIMS study (Profit impact of market strategies) run at Harvard (Schoeffler, Bussell and Heaney: 1974). This study was designed to help answer two basic questions:

- (i) What factors influence profitability in a business – and by how much?
- (ii) How much does ROI change in response to changes in strategy and in market conditions?

In attempting to answer the first of these the study group constructed an equation which explained more

than 80% of the variation in profitability among the businesses in the PIMS data base. This equation included more than 60 terms made up of various combinations of 37 basic factors. Some of the more important factors were ROI, (the ratio of net pretax operating income to average investment), market share, product or service quality, marketing expenditures, R and D expenditures, Investment Intensity (ratio of total investment to sales) and an index of corporate diversity. Particularly important factors were market share, investment intensity, and the existence of certain company factors. The PIMS study found that ROI went up steadily as market share increased. The findings indicated the importance of the economies of scale that are often associated with strong market positions. High market share and superior quality were associated with the best returns. With low quality there was found to be a strong negative relationship between marketing expenditures and ROI. On investment intensity the study found that the higher the ratio of investment to sales, the lower ROI tended to be. This appeared to be because businesses with high investment intensities were not able to achieve large enough profit margins to offset the greater amounts of investment. Other company factors which influenced profitability included size, diversity, and flexibility, though in certain markets specialization yielded high returns.

Hamermesh, Anderson and Harris (1978) expressed concern with certain inferences being drawn from generalisations such as those in the previous section, particularly those relating to ROI and market share. They pointed to the fact that in many industries, companies having a low market share consistently outperform their larger rivals. In a small, but detailed, study, Hamermesh et al found four common characteristics used by successful companies with small market share. These were: careful segmentation of their markets; the efficient use of research and development funds; thinking small; and the pervasive influence of their chief executive.

Bloom and Kotler (1975) concerned themselves with strategies of companies with high market share. They pointed out that while high market share is likely to result in higher profits, it can also mean headaches. In particular, they argued that companies with high market shares are seen as tempting targets for actual and potential competitors, consumer organizations, and government agencies. They must therefore make their decisions and manage their operations with considerable care. In spite of strong support for an objective of market share maximisation (e.g. Boston Consulting Group) Bloom and Kotler argued for a strategy of attaining an optimal market share. Such an approach requires a more careful analysis of the relationship between market share and profitability, to enable

an assessment to be made as to whether the extra profits to be made with higher market share are adequate rewards for the extra risks being taken. It displays an approach conceptually similar to that found in the finance literature.

Hall (1980) has pointed to the increasingly hostile environment in which companies now find themselves. He argued that the broad range of corporate strategies and business 'success formulas' which once brought prosperity no longer work. There now exists a much narrower range of strategic choices if companies are to survive in this hostile environment. Hall's study examined strategies and evolving competitive positions of the 64 largest companies in eight different industries. All eight industries had been subjected to heavy inflationary pressures; all were under some kind of regulatory pressure; all were subject to fierce foreign competition; all were facing lower profitability; and consolidation had occurred in some way in all eight industries. Nevertheless, some companies and industries did rather better than others. Hall was thus concerned to identify how some companies had survived and prospered in the hostile environment, while others had had serious survival problems. A careful comparison of success and problem strategies demonstrated that great success was possible, even in a hostile environment. It further showed that the strategies which led to success shared common characteristics, with successful strategies frequently being associated with purposeful moves towards a leadership position, and problems coming from a failure to gain or defend such a position. Hall proceeded to examine these in some detail. Particularly interesting was the fact that the top two companies in all eight industries:

"demonstrated a continuous single-minded determination to achieve one or both of the following competitive positions within their respective industries:

- *"Achieve the lowest delivered cost position relative to competition, coupled with both an acceptable delivered quality and a pricing policy to gain profitable volume and market share growth.*
- *"Achieve the highest product/service/quality differentiated position relative to competition, coupled with both an acceptable delivered cost structure and a pricing policy to gain margins sufficient to fund reinvestment in product/service differentiation."* (P78/79)

Careful strategic analysis was used in all of these top 16 companies, as opposed to the simplistic adherence to various doctrinaire approaches. Indeed, Hall found that the performance leaders often made decisions which conflicted with such approaches. For example, he found that leadership positions were not being milked, high sustainable returns came from average cost but highly differentiated positions.

Gluck (1984) referred to recent work done by McKinsey and Company on what makes successful companies tick. As a result of its study McKinsey defined five organisational and process requirements for effective strategic management. These were: the need for a planning framework; the need for strategic thinking throughout the corporation; the need for an open process of negotiating objectives; the importance of defining the performance review system; and the need to develop supportive motivational systems and management values. The requirements were seen as being capable of achievement in a variety of different ways. These requirements clearly recognise the validity of many of the criticisms of the last section.

Ramanujam et al (1985) have attempted *"to systematically investigate and synthesize the perceptions and experience of managers as to the role and value of planning in their organisations"*. Their study was thus concerned with assessing the extent to which planning objectives were being achieved, with assessing the extent to which differences could be traced to specific facets of design or use, and with developing guidelines for improving systems. Six different planning objectives were assessed, namely improving short term performance; improving long term performance; predicting future trends; evaluating alternatives based on more recent information; avoiding problem areas; and enhancing management development. Rather more than half of the executives questioned indicated that they were generally satisfied that all of the objectives were being achieved, with in excess of 60% indicating that three of the objectives were being achieved (improving long-term performance; predicting future trends; and evaluating alternatives). Ramanujam et al were thus able to conclude that responding executives were, in general, satisfied with their planning systems, but that considerable scope exists for improvement. Discriminant analysis was used to identify facets associated with the successful achievement of objectives, with seven different discriminant functions being developed, namely capability of the system; use of planning techniques; attention to external facets; attention to internal facets; functional coverage and integration; resources provided for planning; and resistance to strategic planning. Different factors were associated with the successful achievement of different objectives, but in general the more important discriminating factors were: capability of the system; functional coverage and integration; and resistance to strategic planning. Interestingly, the survey found that the use of planning techniques had the lowest rank, implying that uncritical use of some of the techniques referred to in earlier sections will not necessarily help much. Ramanujam et al used their results to:

"... underscore the importance of approaching systems design from a 'situational' or 'contingency' design perspective, since the influences of any system factor is found to vary depending upon the system objective sought to be fulfilled."
(P306)

Clearly criticisms can be made of the discriminant functions used, and of the more general approach of contingency theory. Nevertheless, the study is useful in indicating the relative level of satisfaction of managers with their planning systems.

Overall, the empirical evidence suggests a fairly high degree of use of strategic planning, particularly among large companies. It further suggests that confidence in such systems is reasonably high, but that greater maturity of systems is likely to lead to less formality. The evidence on the relationship between planning and performance is less conclusive, although a number of effective strategies and relationships have been identified.

6. PARE Analysis

6.1 Introduction and Basis of the Analysis

Derkinderen and Crum (1979) in their book entitled "Project Set Strategies", have argued that the two academic disciplines of 'management' and 'Finance' have much insight to offer to each other. Their book represents an attempt to link the strategic management area to a theoretically sound and usable financial economic foundation.

Derkinderen and Crum started by considering the importance of planning, and the effect of increasing environmental complexity on planning. They pointed out that today's managers are confronted with an increasing need to plan, yet at the same time are facing substantial difficulties in making the long range forecasts which are required for successful planning. Under such circumstances they must ensure that data are used effectively, to obtain the maximum amount of information from it. This information can then be used to position the firm as advantageously as possible to meet the challenges of the environment as they arise. Because of the complexities and environmental uncertainties which now exist it is likely that attention will be concentrated on those variables which can be forecasted most reliably. However, adequate attention must also be given to the development of a capability to respond

to factors which might arise in the future, even where the identification of such factors is difficult or impossible.

A methodology that can serve as an aid was then discussed, namely preplanning. Preplanning

"refers to the process of determining the direction of movement of the firm's strategic posture, including appropriate actions that need to be taken to move in the intended direction, supplemented, if possible, by a rough but situationally conditioned indication of the magnitude and rate of change of this movement as far as it is concerned with the full project set." (P3)

This determination was seen as having two dimensions. The first part of preplanning is concerned with analysing the firm's strengths and weaknesses, and its ability to respond appropriately to opportunities and threats as they arise. The second part concentrates attention on the identification of those actions that can be taken to improve the firm's strategic posture so as to make it better able to capitalize on opportunities or handle adverse events as they arise.

Preplanning, as used by Derkinderen and Crum is based upon comparisons between the company in question and an appropriate reference firm. Selected features can then be compared and evaluated, so that the *"current departure position"* of the company can be established. This situation can then be subjected to the analysis of strategic strengths and weaknesses from which inferences can be drawn for possible changes in strategy. In arriving at this departure position Derkinderen and Crum specified a number of *"typification steps"* which might be of assistance. These steps involve plotting a series of matrices setting one attribute against another. Fourteen such steps were identified, namely: market share/market growth; familiarity with markets and technologies; knowledge and skill with regard to markets; cash flow margin; cash flow balancing; cash flow growth/sales growth; concentration of cash flow/concentration of sales; economic circumstances; environmental change impact; inflation impact on profitability; operating profitability/operating risk; bankruptcy risk; insolvency chance; and the weathering ability of the firm.

Derkinderen and Crum discussed strategy and strategic analysis. The ideas discussed (most of which are covered in the previous section on corporate planning) are held to be of great significance for the study of business finance. By its very nature, financial management is a process involving the commitment of large amounts of scarce resources. However, commitment of resources is also an integral part of the strategic process. Since strategy is a broader, more encompassing field than finance, financial management can only be valid if set in the context of the overall strategic situation. However, as was pointed out earlier, in the finance literature there is little mention of the strategic

dimension of asset planning and selection. Yet misdirected or inappropriate asset planning and selections may well lead to serious problems and consequent financial distress.

Derkinderen and Crum reminded us that :

"the present value of a company is a function of its cash-flow stream in perpetuity capitalized at a rate of return sufficient to induce investors to hold the stocks and bonds of the firm. The perpetual cash-flow stream implies that the cash throw-off from the current project set is important, but so is the ability of the firm to find and exploit profitable projects in the future. The all-encompassing capitalization rate is designed to compensate investors for the variability of the cash flow, as well as for another important component that may only be indirectly linked with variability of cash flow : the chance that, for whatever reason, the firm will have to cease operations and liquidate, or in other words, become bankrupt."
(P17) (emphasis added)

Derkinderen and Crum argued that these considerations are in fact broader than implied by the traditional risk-return trade-off included in finance theory, and offer PARE analysis as an alternative. The essence of the PARE (Potential and Resilience Evaluation) logic is as follows. In assessing the ability of a company to achieve its strategic objectives, a corporate planner will initially focus attention on the potential of the firm. Potential is taken as the ability of the company to generate and implement projects which offer the possibility of good returns in both the present and the future. Potential, however, requires the existence of opportunities and the ability to actually carry them out. Projects which possess potential are said to be opportunities. Indeed, without opportunities no firm will remain competitive in the market place in the long run. However, having opportunities, while necessary to success, is not sufficient. A further most important factor is the likelihood that such opportunities can actually be exploited. This capability to act is referred to as the action range of the firm. It depends not just on the financial competence of the firm, but on its other resources, in terms of management, skill, technical ability etc.. Without the capability to exploit opportunities, potential cannot be realised. Derkinderen and Crum argued that the two strategic elements of opportunities and action range, combined into potential, give a richer concept than traditional ideas on return.

Having said this, potential represents only one part of the analysis. The second part concerns the ability of the firm to withstand environmental threats and other unfavourable occurrences. This ability to cope with adversities and contingencies is referred to as the corporate resilience. Resilience is in turn further subdivided into risk and endurance. Risk relates to the uncertainty to which the relevant cash flows are exposed, in terms of variability and sensitivity to contingent setbacks. However, Derkinderen and Crum argued that risk alone is not sufficient to describe adequately the

concept of resilience. An additional consideration is the capability of the company to accumulate or obtain sufficient resources to ensure the survival of the company even when the market turns against it. Derkinderen and Crum referred to this as the firm's endurance.

Derkinderen and Crum went on to argue that condensing the four strategic elements into a *"single or grand indicator"* will help provide directional guidance in terms of assessing the company's posture. They suggested the use of a PARE chart with comparison being made with an appropriate reference firm. Such an approach can be used to assess the appropriateness of the current strategy, against the background of the company's objectives. A do-nothing-strategically-new scenario could be used to identify and reflect on possible deviations from the desired path of development, and attention could be focussed on changes that need to be made to make the strategy more appropriate.

Derkinderen and Crum argued that Potential and Resilience are conceptually closer to the ideas underlying the Gordon and Modigliani-Miller valuation methodologies than the generally recognized measures of return and risk. They pointed out that, at the level of the firm, a concept such as *"growth rate of the cash flow"* could be seen as compatible with the concepts of *"opportunities"* and *"action range"*, but that such a concept does not help in achieving a proper strategic balance. Similarly, the capitalization rate represents a compression into a single indicator of risk and endurance, which may not be valid. Derkinderen and Crum extended this argument somewhat by pointing out that "return" tends to specify the effect of actions, and to ignore the causes, whereas potential focuses primary attention on the characteristics of the firm that are likely to lead to good cash flows. Clearly such a result need not, indeed should not, hold true, but the possibility exists, particularly in areas where detailed forecasting is difficult. The concept of action range is also one which needs to be explicitly considered, since it is likely to act as a constraint on the ability of the firm to generate cash flows in the future. Similar points are made in comparing resilience and the traditional concept of risk. Derkinderen and Crum argued that the conventional measures of risk assume implicitly that there is a direct cause-effect relationship between the chance of a cash flow loss and the risk of bankruptcy. Yet endurance clearly has an important role to play in the determination of the risk of bankruptcy. It is seen as supplementing risk measurement by the introduction of a different set of characteristics, which add another dimension in terms of potential bankruptcy or financial stress.

Derkinderen and Crum thus argued that:

"Since the PARE approach is richer in variety than the conventional measures

of return and risk, and it is indeed in harmony with the long-run concepts that are the basis for valuation of the firm, it should prove to be useful as a tool for financial managers. In the PARE method, dimensions of the business environment that practitioners have identified as important for financial decisions are considered explicitly. Also, this method is consistent with the thrust of academic thinking on simulation and goal programming as to the need for multi-aspect criteria for financial decision making." (P21)

Derkinderen and Crum recognised the difficulty of deriving reliable quantitative measures for the four strategic elements, but considered that an approach which concentrates on identifying the direction and rough magnitude of the effect of managerial actions on each element is both possible and useful. The typification steps, referred to earlier, were seen as a means of shedding further light on the strategic elements.

As a further supplement to the PARE analysis, Derkinderen and Crum suggested the use of the Balancing Identification Method (BIM). This idea is to couple often contrasting facets of strategic behaviour, so as to ensure the identification of a range of significant policy viewpoints that deserve attention in devising strategy. The couplets identified were: maintenance - adaptation; individual action - joint action; initiative - caution; growth - harmonization; concentration - spread; and shifting of action - change in intensity.

Derkinderen and Crum saw the use of PARE analysis as providing a sound foundation for the effective preparation of strategic decisions. That it presents useful insights into the decision making process, and provides a useful framework for analysis, is undoubted. Those of most significance to this study are as follows:

- (i) The concept of strategic positioning is developed. A concept which appears to be realistic in a complex environment.
- (ii) The four strategic elements cover different aspects of the decision making process, and offer richer insights than the risk-return trade-off.
- (iii) Attention is placed on those variables which can be forecast most easily, and with reasonable accuracy.
- (iv) The emphasis is on causes, not effects.
- (v) The emphasis is directional, rather than on precise figures.
- (vi) The importance of being in a position to deal with the unexpected is recognised.
- (vii) The importance of detailing and interpreting environmental signals accurately is recognised.
- (viii) The system developed appears more relevant to explain behaviour in private companies.

- (ix) The typification steps outlined provide useful insights into areas of most strategic importance.
- (x) The Balancing Identification Method provides a useful way of approaching strategy.

Little empirical research seems to have been done on the applicability of the PARE method. Nor is it the intention here to test the system empirically. However, in attempting to devise a model or models of the behaviour of companies in the shipping industry, it seems likely that at least some of the ideas outlined above will be useful.

7. The Shipping oriented Literature.

Various efforts have been made to relate the theory and practice of planning to the shipping industry (e.g. Rich:1982). Until recently such efforts have tended to be somewhat abstract. However, in 1982 the Maritime Administration published "A Guide to Strategic Planning for the U.S. Liner Industry." This study was prepared jointly by Delta Steamship Lines, Inc. and Temple, Barker and Sloane Inc. The study is based on the practice adopted in Delta Lines and the orientation is towards liner shipping. Some modifications would appear to be necessary to the model proposed if it were to be applied to shipping activities other than the liner trades.

The study started by outlining a structure for planning which should enable companies to deal with the challenges of the future:

"The process begins with an analysis of the various 'environments' within which the company operates. This analysis provides a basis for the projection of the company's future environments. Against this projection, an assessment of the company's capabilities is overlaid to determine issues of strategic importance factors which may play a critical role in the company's future success."

"Alternative strategies are designed to address the challenges of the strategic issues. These strategies are rigorously tested in the context of the future environment to select the most effective. Finally the cycle is completed with the implementation of the selected strategy. Monitoring performance against strategic objectives will lead to the identification of new strategic issues. The process would then begin anew." (P1-2)

While it is possible to disagree with certain aspects of the above process, or with the implicit weighting given to the various parts, the model developed represents a very serious attempt to apply planning to one section of the shipping industry.

The use of an effective planning system was seen as leading to the development of strategies which focus on areas of opportunity while avoiding threats, yet which have enough flexibility to respond to the unforeseen. The system should also provide 'yardsticks' to monitor progress towards strategic objectives.

The study described the first phase of the planning process as the analysis of the environments within which the company operates. This analysis was separated into five major segments, covering the industry, company, market, competition, and other environmental factors.

The industry analysis should include careful analysis of both domestic and foreign operators in the particular sectors of the shipping industry which are relevant, and some comparison with other industries, particularly other transportation industries. This last stage is essential to ensure that the industry is making enough returns to continue to attract funds into the industry. Financial comparisons should be made, for different companies over time, covering such things as revenue, net income, profit margin, total assets, return on assets, stockholder equity, return on equity, debt/equity ratios, etc. Such comparisons are fairly easy for public companies in the OECD countries. This is less true for other foreign competitors. With detailed industry data it should be possible to identify those firms which are successful. The principal factors that have contributed to success or failure should be identified where possible. The MARAD study identified a number of possibilities for differentiating strong from weak companies, and also identified those factors which had apparently contributed to the success of the stronger firms in the liner industry in the USA. These included: careful fleet planning; market oriented fleet replacement programmes; involvement in US flag protected trades; relatively low debt burdens; and involvement in a number of trades, giving a kind of portfolio effect.

The company analysis was seen as being concerned with the determination of the company's particular strengths and weaknesses. The major focus of this analysis should be at the trade route or individual service level, with the economics of each service being analyzed to answer questions concerning such things as: cargo mix/rate levels; break-even capacity, utilisation and market share levels; costs and margins (and trends therein); and the economics of different ship types. Trends in market share were also viewed as important indicators of strength in the liner trades. (The study did not cover the bulk trades, where such factors may not be considered important.) Strategic analysis of a company's costs was also seen as extremely important, with the focus being on those components for which significant variations would have the greatest impact on the company's performance.

Company strengths and weaknesses then need to be related to the expected supply and demand conditions, and put in the context of any remaining environmental considerations. These latter considerations are likely to include political factors, business-environment factors, and social factors. Trade forecasts may well need to be modified, sometimes considerably, to incorporate these factors. The study suggested that in estimating the potential impact of such events the analyst should try to ascertain both their likelihood, and their potential impact on trade. Actual demand analysis is no longer easy in shipping. The aim, however, should be to develop an understanding of the factors underlying the demand for shipping services within specific market areas.

An analysis of supply represents the logical next step. In making such an analysis the logical starting point is to profile competitors, both existing and potential. Details need to be collected on their operations to enable a thorough analysis of their strengths, weaknesses, and current strategies to be made. Useful historical data was seen as including information on the following: fleet profile by competitor; vessels on order; market share; and performance figures. Information like this should help answer a variety of questions of use in strategic planning, which in turn should help the planner determine the nature of the competitive environment. In considering this, further questions may well be necessary, covering such things as: the rate of change in the trade; profitability; barriers to entry, and the nature of the system (i.e. conferences, pools, bi-lateral agreements, independents).

The above procedures can then be used to ascertain the overall level of supply. Total available capacity can be estimated for each competitor. Published sources regularly provide corroborating information. Trends in capacity supply should also be identified. Particular features which could be identified (or at least suggested) by trend analysis include such things as: commitment to a particular technology by a competitor; relative aggressiveness of competitors in a particular market; shifts from cross traders to national-flag owners; overall trends towards containerisation, etc. Other factors may well influence estimates of demand, such as: competitors response time; the potential for joint action; technological trends; the degree of competition from alternative modes of transportation; possibility of new entrants; and new buildings, either currently on order or expected to be ordered in the future.

Careful supply/demand analysis should then result in a number of important insights being obtained into competitive strategy in a trade, including such things as: an indication of the effect of additional capacity on utilization levels; the need for new vessel technologies; a sense of the timing of new vessel or equipment decisions; and the impact on profitability caused by the level of capacity

utilization. The interaction of supply and demand, when coupled with other competitive and environmental factors, should enable some assessment of freight rates to be made, or at least some measure of the impact on freight rates. This in turn, when related to costs, enables the impact on carrier profitability to be assessed. Profitability thus depends on cost levels, both capital and operating, capacity utilisation, and the nature of the competition in the trade. Possible structural changes in the industry need to be considered as well.

Once all this has been done the planner can turn to the development of appropriate strategies. In the first instance strategy development should be focused on the most critical issues. This is done by overlaying the company "strengths and weaknesses" analyses over the environmental projections. The result should be the identification of a number of strategic issues. These tend to relate to areas of potential change which are likely to create opportunities or threats for the company. The identification of strategic issues should enable senior management to define a "mission" for the company. The definition of the mission needs to be followed by the setting of strategic objectives, which provide a basis for the allocation of resources, for trading and controlling performance, and for obtaining commitment of necessary personnel.

A number of strategic alternatives should then be designed, to cover the planning period (thought to be about ten years for the liner industry). Strategic alternatives should be sufficiently well developed to enable resource requirements, cash flows, and market position to be clearly defined over the planning period. The proposed strategy should define the company's position in relation to: market share; market role; competitors and their likely actions or reactions; requirements for new equipment, capacity, and services; marketing strategy; organizational structure; possible synergies with other sections of the corporation; and the regulatory environment.

The strategic alternatives then need to be evaluated, and the best chosen. The study suggested the use of computer simulations as a means of objectively evaluating alternative strategies. Suggested output is in the form of income and cash flow statements, capacity utilization tables, and market share tables. The alternative strategies can then be evaluated taking into account such things as: the internal rate of return; the demand on scarce resources; the timing and impact of cash flows, and the effect on the corporation's financial statements. Other factors seen as worthy of consideration include such things as: consistency with the company's objectives; compatibility with expected environmental conditions; flexibility; the level of risk; whether the company's economic resources are being

effectively utilised; and the internal consistency of the strategies.

It should be noted that this selection process is far more complex than that proposed under finance theory. The use of discounting techniques would appear to be perceived as only one of many aspects in the selection process. Virtually no empirical work on the shipping industry has been done to ascertain how decisions are actually made, and the relative importance of the different aspects referred to above. Such an examination is a significant part of this work.

Selection of an appropriate strategy is followed by preparation of this formal strategic plan, necessary if the strategy is to be successfully implemented. The study suggested detailed plans covering: marketing; operations/services; competition; finance; technology; organizational/personnel development, and corporate development. Appropriate monitoring of the plans, and feedback on implementation differences, should enable the whole planning process to be started afresh.

8. Conclusions on the literature on corporate planning & strategy

In general the writings on rational planning systems suggest some measure of agreement on the kinds of steps and elements typically found. Among the more important elements identified were : the setting of objectives; company appraisal; environmental analysis; definition of assumptions and forecasts; identification of alternative strategies; integrated plans and action programmes; budgets; and a review process. Rather less consistency exists with regard to the approaches to planning which have been identified, although the different approaches may well be compatible and complementary. Little published work exists on strategic planning in the shipping industry, with the 1982 U.S. Maritime Administration publication, "A guide to strategic planning for the U.S. liner industry", representing the major attempt to relate ideas on strategic planning to the shipping industry. Similar key elements were identified, one of the more important being the analysis of the environments within which the company operates, covering industry, company, market, competition and other environmental factors. The company analysis was seen as being concerned with the identification of the company's strengths and weaknesses. When related to supply and demand conditions, and put in the context of other

environmental considerations, it is argued that a number of important insights can be obtained, from which alternative strategies can be developed. Alternative strategies can then be evaluated using a variety of criteria, including such things as IRR, the timing and impact of cash flows, the effect on the corporate financial statements, flexibility, and level of risk.

The literature also includes reference to a variety of techniques and approaches to assist in the development of appropriate strategies. Some of these e.g. SWOT analysis, the stakeholder approach, can be incorporated quite naturally into the corporate planning process. Indeed, corporate strategy is particularly concerned with looking for opportunities and identifying threats, and with analysing its resources to identify its strengths and weaknesses. Other techniques, such as business portfolio matrices, represent attempts to devise some kind of systematic procedure for generating and choosing strategic alternatives. These have been fairly severely criticised when used in a simplistic way, and also when used in mature industries. Nevertheless, consideration of the underlying principles of these matrices seems likely to provide useful strategic insights. Other interesting techniques identified relate to political planning and futures research. This latter approach is seen as being particularly useful when forecasting is difficult and conditions volatile.

PARE analysis, developed by Derkinderen and Crum (1979), represents an attempt to link strategic management and finance. It provides both interesting insights into the decision making process, and a useful framework for analysis. Its more important ideas include the development of the concept of strategic positioning, which appears particularly important in a complex and volatile environment; the identification of the four strategic elements of opportunities, action range, risk and endurance; the attention given to variables which can be forecast most easily; the importance of being in a position to deal with the unexpected; and the importance of detailing and interpreting environmental signals.

Finally, it must be recognised that a body of writings exist which severely criticises rational approaches to planning, with a variety of alternative approaches being proposed, based upon such things as institutional and political factors. These approaches are generally regarded as being antithetical to rational systems. They appear, however, to be having an impact on the rational approaches, with an increased recognition that a more broadly based approach to strategy development and implementation is required. Undue formality and rationality have been identified as the cause of inflexible and excessively quantitative systems which may result in a degree of inertia and the stifling of creativity

and innovation. Current writings in this area reflect the need to ensure the maintenance of an organisational environment conducive to innovation and the successful implementation of plans.

The empirical evidence available suggests fairly widespread use of corporate planning systems or models in the larger companies in both the U.K. and the U.S.A., and that confidence in these systems is generally high. Interestingly, it suggests that increased maturity is likely to lead to less formality in the systems.

9. Direction of the research and its relationship with the literature

9.1 Introduction

It is apparent from the above sections that the literature on the area is extensive, but lacks coherence and consistency. Some measure of consistency exists within the area of finance. Rather less exists within the area of corporate planning and strategy, particularly with regard to the variety of approaches and techniques being proposed, although some measure of agreement on key steps and elements can be found. Certainly, with relatively few exceptions (e.g. see Marshall 1985), little real attempt to integrate finance and corporate strategy has been made, in spite of suggestions which have been made that this should be done. Further, considerable criticism has been made of the literature in both areas, particularly with regard to the question of relevance in times of increased complexity. Clearly there is scope for considerably more empirical research. This project has necessarily to be limited in scope. The remainder of this section is thus concerned with providing an indication of the direction and emphasis of the research to be undertaken, and its relationship with the literature review.

9.2 The theory and literature on finance

The theory of finance has some measure of general acceptability. The objective of shareholder wealth maximisation, while subject to some criticism, seems still to have pride of place in most text books. With it goes the concept of Net Present Value. The internal rate of return does not meet with the same level of theoretical approval as the NPV method, and it has been shown to be deficient in the areas

of mutually exclusive investments, projects with non-conventional cash flows, and capital rationing situations. Whether such circumstances are of much practical significance is open to some doubt, particularly in the area of capital rationing. It should be possible to identify the importance of capital rationing in practice, at least for the particular industry that is the concern of this thesis, and some consideration of this issue will be given later. Also, if the specific industry of shipping is considered, it is unlikely that expected cash flows would be non-conventional, even if actual flows turn out so. Hence it is possible that, at least when applied to shipping, the objections to the use of the yield method may prove to be of little consequence. Alternative methods of investment appraisal have met with very little support, leaving discounting techniques as the clear theoretical favourite.

When turning to surveys of practice the dominance of NPV (or even of discounting techniques) is less obvious. Alternative methods of appraisal, particularly payback and the IRR, seem to be preferred. Exactly which methods are used in evaluating projects in shipping, and the reasons for their use, is an issue which is addressed in this thesis. However, questions of this sort need to be put into a wider context. The relevant questions are: How are investment decisions actually made, and how significant are the component parts of the process, in reaching a final decision? Research needs to be somewhat more qualitative if the importance of evaluation methods is to be determined.

Techniques of risk analysis have been well developed, at least in theory, and the industry specific literature certainly suggests that such techniques could be applied to shipping, though no empirical research exists specifically concerned with this area. Even the more general empirical research tends to be quantitative. However, some of the discussion in recent research has indicated a certain cynicism regarding risk analysis. In analysing the way in which capital decisions are made, this thesis incorporates consideration of such things as attitudes towards risk, the identification of these factors considered most important in terms of total risk, and methods of risk analysis.

The literature on the choice of a discount rate fits into two categories, based upon the weighted average cost of capital or a modified CAPM. Exactly which method (if any) is used in practice, and the rationale for its choice, is less clear. The methods used in the shipping industry, and their rationale, are identified in this study.

The literature on the interaction of the financing and investment decisions seems clear, where it is actually discussed in detail. It is less clear that the implications are fully understood in practice. The analysis thus includes a consideration of the evaluation processes actually used and the impact of

different financing packages on the decision. The scope for confusion in this area is considerable in the shipping industry.

The literature on capital structure is conflicting, though the "majority" view appears to suggest that an optimal capital structure exists. Questions remaining unanswered are: Do managers or companies themselves actually work towards a capital structure, and what is the rationale for this? Where leverage does change significantly, what are the overall effects on value? How does the interaction between the suppliers of finance and individual companies affect the capital structure decision? This thesis considers the first and third of these questions in some detail, and identifies some insights into the second question.

Both the criticisms of finance theory, and the theory regarding corporate planning and strategy, suggest that a more flexible approach to investment is necessary. Multiple objectives appear to be more likely than the single objective assumed by finance theory. Objectives and their relative importance can be identified and assessed, in the context of the shipping industry.

A factor which re-appears consistently in the literature is the increased complexity and turbulence associated more and more with today's markets. The chapter on the shipping industry indicates that this is undoubtedly true for the area currently under consideration. In considering investment decisions in shipping considerable attention is devoted to determining how managers respond to such difficulties, and the effects on their forecasting and appraisal methods. While the PARE method is not specifically tested, a number of ideas incorporated in the method are considered, and if necessary built into the models developed. Specifically, the ideas of potential, action range, resilience and endurance, are kept closely in mind in the subsequent analysis, together with the ideas of strategic positioning. Such ideas have much in common with some of the other criticisms on the real extent of financial evaluation.

9.3 The theory and literature on corporate planning and strategy

Much criticism has been made of the fact that the financial evaluation techniques generally recommended appear to be based on the assumption that the fundamental strategic decisions have already been made. This simply may not be true in many major investments. While it is more likely to be true of minor investments, strategic considerations may well override narrow financial evaluation

completely. It is interesting to note that the literature on corporate planning and strategy does not place great emphasis on financial considerations, though financial constraints need to be recognised, and objectives are often financially oriented. In short, the relationships between corporate planning and financial evaluation and planning are far from clear. This thesis therefore aims to identify the areas of overlap and linkage between finance and corporate planning and strategy, with regard to investment and financing decisions in the shipping industry. To achieve this aim a number of factors relating to planning and strategy are examined, and their contribution to the investment and financing decision making process assessed. The first such factor relates to the extent to which planning systems are actually in use, and the period for which plans are drawn up. More detailed questioning also enabled the nature of the planning process in the shipping industry, as it relates to capital projects, to be identified. Part of this process involves consideration of the nature and importance of the background environmental and economic analysis used to support strategic decisions. The strategic issues seen as being of most importance to investment and financing decisions are also identified and explored. Consideration of these factors, when coupled with earlier areas of investigation more directly related to finance theory, enables a clearer picture to be obtained of the investment and financing decision making process in the shipping industry, which draws upon both corporate strategy and finance.

In considering the review of the literature in this area it is important to recognise the nature of the aim set out in the preceding paragraph, relating to the identification of areas of overlap and linkage between finance and corporate planning and strategy. Not all sections of the literature review are equally relevant to its achievement. The factors identified above relate largely to section 2, on the development and nature of corporate planning and strategy, section 6, on PARE analysis and potential links between strategy and finance, and section 7, on strategic planning in the shipping industry. Rather less attention is given to consideration of the techniques supporting corporate planning, reviewed in section 3, although attention is given to the establishment of criteria for project acceptability, and to identifying the strategic issues seen as being important, both of which are likely to overlap with the ideas underlying these techniques. It is also important to note that within the areas of investigation identified above, attention is focussed on economic and financial factors. No systematic attempt is made to establish the extent to which the decision making process is influenced by political, inter-personal or motivational factors, or by internal organisational structures, although in certain instances executives volunteered information relating to these factors. This approach is not intended to

deny the validity of the criticisms of rational planning (reviewed in section 4), or the relevance of such factors, but to recognise that the closest links between finance theory and the theory relating to corporate strategy are likely to be in the areas of concentration identified above.

9.4 Achievement of the aims of Thesis

The above approach should enable the aims of the thesis to be achieved, by facilitating analysis at several levels.

- (i) actual practice can be ascertained, from which a range of behaviour patterns can be identified. In doing this due consideration can be given to the examination of managements attitudes and priorities, and to identifying the range of strategic considerations underlying recent investment decisions.
- (ii) Actual practice can be compared with finance theory, so as to assess the practical relevance of the theory of finance to investment and financing decisions in the shipping industry. This should permit the identification of areas in the theory which require extension or alteration, so as to bring theory and practice closer together, to reflect managements attitudes and priorities, and to handle increased market complexity and volatility.
- (iii) The areas of overlap and linkage between finance and corporate planning and strategy can be identified.

From these analyses a descriptive model can be developed of investment and financing decisions in the shipping industry, subject to the limitations of rational planning systems identified in the preceeding paragraph, which should provide guidance as to likely behaviour patterns in the industry.

Chapter 5

Research Methodology

1. Overall Approach

As was pointed out in Chapter 1, an important part of this study was an empirical assessment of the relevance of traditional finance theory to investment and financing decisions in the shipping industry. A detailed set of questions was thus devised, which would assist in making such an assessment. The basis of the questioning is set out in Chapter 7. However, before embarking on a wide range of interviews, two pilot studies were carried out, in which these questions were used and tested, and areas of investigation clarified.

(i) The first of these consisted of an analysis of ten shipping companies. The first three companies were analysed in considerable detail, with extensive case information being collected. The basis of this pilot study and its findings are dealt with in Chapter 7.

(ii) The second pilot study was a survey of nine banks, to identify attitudes and practices relating to the financing of capital investment in shipping. A considerable amount of consistency was found in this study and the same approach was considered appropriate for the main survey on banks. This is found in Chapter 6.

The results of the pilot studies tended to suggest that conventional finance theory did not adequately explain the situations and methods found in the shipping industry. Indeed, the contribution of finance theory to investment practice in the industry seemed to be rather limited. This is not to say that this conclusion is unimportant, and the earlier specific questions were continued throughout the study to complete the assessment. However, strategic and other considerations, often on a corporate wide basis, appeared to be of far more consequence than the financial analysis itself. In some cases this was attributed to difficulties in forecasting. In other cases the financial analysis developed naturally from the corporate planning process itself, and was an integral final hurdle to be overcome. In some

cases planning and decision making was done in fleet terms, making traditional project analysis less relevant. A range of background environmental, market and financial information was found to be collected, sometimes as part of a formal planning system, sometimes informally, while the decision making process was often seen as being spread over some considerable time. Behaviour patterns were found to vary quite considerably, depending upon the size and nature of the companies concerned. For these reasons it was decided to :

- (i) extend the analysis of shipping companies to consider a number of additional factors not dealt with in the pilot study, principally to do with the relationship between corporate planning systems and investment and financing decisions, and
- (ii) to increase the emphasis given to other areas, principally with regard to the identification of the strategic issues considered important in investment and financing decisions, and the identification of the range and importance of the background information used in the decision making process.

The shipping company pilot study also resulted in some re-thinking of the main thrust of the thesis, and of its overall balance. While the assessment of the relevance of the theory of finance to investment and financing decisions in shipping was still considered worthwhile, the second aspect, namely the analysis of the way in which companies actually approached and made their investment and financing decisions, together with the identification of both the rationale for these decisions and the links between strategic and financial aspects of these decisions, now seemed to be the more important area. Attention was thus turned to consideration of the best ways of dealing with this particular aspect.

The methodology eventually decided on was significantly influenced by the approach suggested by Glaser and Strauss (1967). The essence of their ideas is that a theory or model should be derived, based upon some perceived facts or evidence. Comparative analysis can then be used to determine whether or not this theory or model is generally valid, with further evidence being collected from comparable groups to ascertain whether the initial evidence was correct. This comparative analysis proceeds, using a process referred to as *"theoretical sampling"*, until an adequate sample has been achieved. In general, theoretical sampling should be continued until a *"theoretical saturation"* point is reached. Saturation means that no additional data are being found which helps to develop the theory or model any further. As similar instances repeat over and over again, it becomes empirically reasonable to treat a category as saturated.

In fact, using this approach, it is highly unlikely that a theory or model will be derived which does not require further extension, refinement or modification. Indeed, in many cases multiple theories are needed to build up a complete picture. Single theories seldom include all relevant aspects, and multiple theories permit a more all inclusive analysis. The process of theoretical sampling permits such a development, once the need is recognised for breaking down the sample into various relevant groups or categories. Once one category is saturated, the logical next stage is to shift attention to new groups or categories, to develop other theories which can be tested to saturation. In doing this it is important to look for groups and categories which have significant differences, since this will give greater confidence in the theories which are developed. Nonetheless, since it is clear that not all categories will have the same importance or relevance, the depth of the analysis of each category is likely to vary.

The end result should be the derivation of a theory or set of theories relating to a number of groups or categories. The approach has a number of advantages.

- (i) Such an approach means that one can be relatively sure that the theory will fit the actual facts and will work.
- (ii) Since the categories are chosen after careful examination of the data, and the theories are derived from observed data, laymen involved in the area to which the theory applies are likely to be able to understand it.
- (iii) Theory which is based on data is likely to last, albeit with some modification and reformulation over time.
- (iv) The emphasis is on the generation and development of new theories. Since accurate evidence is not so crucial for generating theory, the nature and type of evidence is not as crucial as in other forms of analysis. This approach facilitates the use of a wide range of material, some published, some anecdotal, as well as that obtained by more formal methods.
- (v) The way in which categories emerge solves the problem of fit, relevance, forcing and richness. Indeed Glaser and Strauss argue that an effective first strategy is to ignore the current theories and literature, so as to avoid the possibility of being unduly influenced by them. Once the categories have been defined and analysed comparison with existing theories and literature can be usefully made.

Such an approach could be used to develop a set of theories or models of behaviour for different categories of company, and is thus consistent with one of the objectives of this thesis. However, it

does have the disadvantage that it tends to mitigate against the use of scientific samples (in a statistical sense). This poses something of a problem, given the various aims of this thesis, in that the best data to develop a theory or model of investment behaviour will not necessarily be the best to assess the relevance of alternative existing theories. A further problem of building a general model or models is that instances of unusual behaviour, or responses to specific circumstances or conditions, are likely to be played down in, or excluded from, the results, simply because they are unusual. This was considered undesirable, since such exceptions are themselves often quite interesting.

Inevitably, therefore, a compromise solution was reached. The Glaser and Strauss approach was adopted in terms of the use of theoretical sampling, to a level sufficient to identify virtually all of the key issues in investment and financing behaviour, so as to be able to set out a range of analyses of behaviour, from which a model or set of models might be developed. It perhaps needs to be emphasised that these analyses are broadly based, and further research could usefully expand certain aspects of the findings. However, in addition to this approach, questions were also asked in such a way as to facilitate an assessment of finance theory, while the analyses of behaviour include both usual and unusual behaviour.

The above ideas were implemented as follows:

- (i) Certain general conclusions concerning the behaviour of shipping companies were derived from the pilot study.
- (ii) In analysing the shipping company pilot study it became clear that while some broad generalisations could be made, there were other areas where practice differed considerably. For example, corporate planning models seemed to be well developed in the large public companies, but to be almost non-existent in smaller companies. Attitudes towards risk varied considerably, as did availability of finance. Some kind of categorisation of the type referred to above was clearly needed to encapsulate and explain these differences. The pilot study had suggested three distinct categories, and it was decided to analyse behaviour in these three categories in much more detail, with a view to the possible development of a model for each category, or the development of a model with branches reflecting the approaches found in the different categories. The categories identified were as follows:
 - (a) Large widely held public companies
 - (b) Small or closely held public companies or medium/large private companies
 - (c) Other small or "entrepreneurial" companies. This category included certain companies in the

Greek shipping industry, often represented as behaving in a particularly "entrepreneurial" way.

(iii) A series of interviews were then conducted with the explicit purpose of analysing behaviour in the companies, so as to build up a fairly complete picture of behaviour with regard to investment and financing decisions in each category. Interviews were conducted to saturation point in these three categories, to ensure that all important aspects of behaviour in the areas under consideration were actually considered.

(iv) As the study progressed it became clear that these categories needed further subdivision or refinement, particularly to cover the nature of the activities carried out, e.g. bulk or liner trades, conglomerate or transportation company. Some interesting differences arose with regard to UK-USA public companies, though these were not as great as one might have expected. In some cases certain difficulties arose with regard to categorisation. For these reasons it was decided to continue with a standard approach to the questions asked, in terms of broad structure, but with the facility to pursue certain areas in much more detail for certain categories than for others. Indeed, given the desire to develop the kind of model/s referred to above, there was a clear expectation that this would occur. For example, there was an expectation that large public companies would have more formalised corporate planning systems than smaller companies. Hence, it was likely that questions on corporate planning would be covered much more quickly in discussions with smaller companies, whereas considerable detail was likely in the public companies. Once categories of activity were included other significant differences became apparent. For example, it became clear that companies involved in the liner trade were likely to be concerned with such things as market share and detailed competitor analysis, whereas bulk operators, particularly those operating on a world wide basis, were unlikely to find this particularly relevant. Overall, this use of a standard approach, with flexible use and extension of certain sections, was considered to be the most suitable, since it ensured consistency of questioning, enabled a continuous assessment to be made of the validity of the findings to date, yet also permitted further developments and refinements to be made to the analyses as the study progressed.

(v) The assessment of finance theory was based on the same sample of companies. It is thus difficult to make precise quantitative judgements on its applicability, since the sample was not, of necessity, as scientifically derived as it would have been had these tests been the sole or main criterion. Nevertheless, examination of the sample basis should indicate that this is far less of a problem for public companies than for the other companies. Also in developing the analyses for each

category it was possible to draw strong inferences about both traditional finance theory and various alternatives.

It is perhaps worth noting that the approach outlined above is consistent with the ideas on contingency theory outlined earlier. Contingency theory suggests that there is no one best way of managing in all situations. It is suggested that the strategies which are most effective for a particular company are contingent on (i.e. depend on) the particular environment in which the company finds itself. Different circumstances lead to different optimal solutions. The contingency approach identifies various types of "if-then" relationships and suggests general directions in which policy can go, depending upon the situation. As has already been pointed out, contingency theory has been criticised (unless modified along the lines suggested by Miller (1981) - see page 106), principally because it assumes that a particular environment is given. Such an assumption may not be valid, since it can be argued that management can be proactive and hence influence or change its environment. The identification of categories and sub-categories outlined above will enable different approaches to be identified and analysed, and will thus provide an indication of how management reacts to different circumstances, and the strategies and approaches likely to be associated with these different circumstances. As such, it is consistent with a contingency approach, but is not limited by the assumption of this approach. No attempt has been made to assess the relative effectiveness of the different approaches.

This approach, apart from having the advantages outlined earlier, has the further considerable advantage that it permits the identification of approaches and behavioural patterns which are not unduly influenced by one particular theory. Hence linkages between the various theories which exist are more likely to be identified, and a more general set of models or theories derived.

2. Basis of the Interviews

In both pilot studies structured interviews were used, in which certain specific areas were discussed, and specific questions asked, but where those being interviewed were encouraged to discuss the industry fairly widely.

The use of structured interviews, rather than postal questionnaires, was considered important in

the first instance, because of what has been described by one person interviewed as *"the shipping club"*. Personal contacts are extremely important in the industry, and it seemed likely that a better picture of the industry would be built up by the use of contacts than would have been possible using a more random approach. There is no doubt whatsoever that a reasonably high proportion of the companies interviewed would simply not have responded to a postal questionnaire. As it was, the degree of willingness to divulge information, and to discuss actual cases, varied quite considerably. Generally the public companies were very willing to discuss issues, with private companies being less so. Nevertheless, the success rate in organising interviews was extremely high.

The pilot studies reinforced the arguments for the use of structured interviews. In many companies a certain amount of probing was found to be needed as far as answers were concerned. For example, the question, *"Do you use dcf techniques?"* was answered in the affirmative by one company in an early interview. Further discussion and clarification, particularly by the use of case material, made it clear that dcf methods would be used under very restrictive conditions (e.g. a long term charter of 10-15 years) but that such conditions *"very rarely"* existed. In practice dcf techniques were of very limited significance to actual decision making in this company. This type of problem was found in an extremely large number of companies, reinforcing the view that postal questionnaires would be a misleading tool.

In carrying out the interviews, answers were obtained wherever possible to specific questions, and case material was collected for acquisitions made over the last five years. Case material was not always made available in detail, but as a corroborating and reinforcing mechanism it proved extremely useful. It also provided insights into behaviour which could not always be identified from more direct questioning. Specific questions asked, and an outline of the structure of the interviews held, are found in Appendix 1.

The pilot study relating to the banks also used structured interviews. As previously mentioned, it soon became apparent that no major amendments to the structure of the questions was necessary, and considerable consistency of answers was found. In fact, the consistency was so great that it was decided to merge the pilot study for the banks with the main study, and to limit the size of this study. The questions asked, and the analysis of results, are covered separately in Chapter 6. Because of their importance on shipping company decisions, these results are covered before those of the company studies, and relevant aspects are then integrated into later chapters.

3. Sample Selection

The 1981 Fairplay World Shipping Year Book listed some 603 shipping companies in the world, together with 41 banks with shipping interests. Given the present state of flux in the shipping industry, these figures were probably incorrect when they were published. However, they give some idea of the size of the industry. When broken down by country there were approximately:

90	companies with Head Offices or registered offices in Great Britain
75	North America
75	Scandinavia
30	Greece
150	In the remainder of Europe

Clearly it was impossible to handle more than a relatively small number of these companies, and severe geographical constraints had to be imposed. The cost and time of travel to interviews also imposed other constraints. For all of these reasons it was decided to concentrate on two main geographical areas, namely the UK and the North Eastern part of North America. In both these regions there were a number of Greek owners, so some analysis of this sector of the industry was possible. Data on UK companies and banks (including London offices of US banks), were obtained between August 1982 and July 1983, while that for North American companies and banks was obtained principally from September to December 1983, with a smaller amount being collected in the first half of 1984. This was made possible by a period of teaching and study at the United States Merchant Marine Academy in New York from July - December 1983, and at Maine Maritime Academy from January - April 1984. These periods provided an opportunity to carry out a wide range of interviews, but in turn meant the implementation of a more rigid interview schedule. On occasions it proved impossible to conduct interviews simply because time schedules did not coincide.

Given the research methodology to be used the study attempted to incorporate as many companies as was necessary to develop acceptable models of behaviour. It thus incorporated the following:

- (1) As many public companies as possible, provided that they had sizeable shipping interests, and had made recent investments in ships (say in the last five years).

- (ii) A sample of medium to large private companies, covering both bulk trades and liner trades.
- (iii) A sample of small private companies, to include a reasonable number of Greek owners.

In deciding on sample size for each of these a number of factors were influential:

- (i) **Relevance.** Company size clearly has a considerable effect on the ability to influence the industry. Also models of public company behaviour seem likely to be transferable, at least in some measure, to other public companies in non-shipping areas. Greater emphasis was thus placed on public corporations and the larger private corporations.
- (ii) **Complexity.** The issues involved in running a public company tend to be more complex than those of running a private company. The sample size thus needs to be larger for public companies if these complexities are to be identified and encapsulated in a model.
- (iii) **Availability of data and access to companies.** In general it proved slightly easier to arrange interviews with public companies than with private ones. Very much more case material was made available in these companies, and much more corroborating evidence was publically available. Even annual accounts proved difficult to obtain from some private companies.
- (iv) **The assessment of finance theory.** Since one of the aims was to assess the practical relevance of finance theory, which, rightly or wrongly, seems to be generally written with public companies in mind, it was felt that the sample for public companies should be as large as possible, enabling a more valid assessment of the contribution of finance theory to be made.

For all of these reasons, greater emphasis was placed on public companies than on any other category. Interviews/discussions were held with a total of 52 companies, the majority of which are listed in Appendix 2. Several companies were prepared to discuss issues and methods, on condition that they were not identified. These are therefore excluded from the list.

The approach to public corporations was broadly as follows. Of the 14 companies quoted in the shipping section of the London Stock Exchange (with offices in the UK), seven were interviewed, informal discussions by telephone were held with four, (though results were not incorporated) and two were discounted as being no longer in the business of investing in ships. The final company in this section was also omitted since it was diversifying into new non-shipping areas and running down the investment in ships. In the final analysis it must be admitted that distance was a contributing factor in determining precisely which companies were visited. In the four cases referred to above where discussions were held by telephone, interviews would have been possible had time been available. In

addition to the above, interviews were held with a further four publicly quoted conglomerates with a significant interest in shipping. In the USA all the major shipping companies (or public companies with major investments in shipping) in the New York area were interviewed, with the exception of one oil major where diary clashes prevented a meeting. In total, interviews were held with ten such U.S. companies.

Interviews were also conducted with three other companies and/or individuals which did not fit the above criterion exactly, but which were of sufficient size or nature to warrant inclusion in this section. The total for companies of this type was thus 24, representing approximately an 80% sample for the geographical area covered.

For the private companies the sample was necessarily less complete, and somewhat more arbitrary. In general, considerable advice was taken from contacts with regard to the following, and a balance was sought between them:

- (i) Size of company
- (ii) Type of activity - liner, bulk, or mini-conglomerate
- (iii) Amount of shipping investment currently being embarked on.

The degree of "*saturation*" with regard to each model was also constantly reviewed.

Thirteen companies of this type were interviewed in the UK together with 15 in the USA. Eight of these companies were Greek owned. While the majority of these companies were involved in bulk shipping, they included some with interests in the liner or specialist trades. A number were involved in a variety of activities, generally, but not exclusively, shipping related, while at least three were mini-conglomerates.

Given the size of the UK market, the above sample represents a relatively small proportion of the private companies based in the UK. Using the total numbers in the Fairplay Year Book, it represents about 20% of the total. There is inevitably a certain amount of randomness about the selection. The 15 private companies interviewed in the USA represented approximately 60% by number of such shipping companies in the New York area, but approximately 90% of those still actively investing in ships.

Probably of most significance in considering the size of the various samples, and the approach used, is the fact that in both the UK and the USA it proved impossible to arrange interviews in only ten cases. In six of these the problem was simply one of time restrictions. In two cases the explanation

was given that the company was not investing in shipping, and that many questions would be hypothetical. In only two cases were outright refusals given, and in one of these cases a takeover made such a refusal understandable. Using the above method, the degree of co-operation by companies was extremely high. In the final analysis discussions were held with 52 companies, 19 for category 1, 18 for category 2, and 15 for category 3.

As regards banks, some 41 were shown in the 1981 Year Book, as providing ship finance. The geographical breakdown of these was as follows:

Great Britain	16
North America	10
Rest of Europe	12
Rest of World	3

The above breakdown relates to the location of Ship Finance Offices rather than world headquarters. A total of 19 banks or similar were interviewed, 13 in Great Britain and 6 in North America. Given the geographical area to be covered, this represents a 70% sample.

Given the methodology used, the sample basis and size is not as important as it might be in a verification oriented project. Nevertheless, the sample size for both public companies and the banks is such that a very high degree of confidence exists in the results.

Chapter 6

The Banks

1. Introduction and Basis of Study

1.1 Rationale for Study

The reliance of the shipping industry on yard credit and the Banking Community for large amounts of debt finance has been made clear in chapter 2 on the Shipping Industry. Given the importance of debt finance it was considered appropriate to enter into discussions with banks and associated providers of debt finance, so as to establish the extent to which terms and conditions of lending, and attitudes and approaches of lenders, actually influenced investment and financing decisions within shipping corporations. The purpose of an analysis of the banking sector was thus not to provide a detailed analysis of bank lending per se, but to provide a framework within which corporate decisions could be set.

1.2 Survey Sample

In total 19 interviews were held with representatives of banks and related organisations in the UK and the USA. A detailed list is included in Appendix 3. Interviews took place in both London and New York with one bank. One of the interviews was with representatives of the Maritime Administration in Washington, where discussion took place on a range of issues, particularly those relating to Title XI finance. In many ways the Maritime Administration acted along similar lines to those of the banks. Nevertheless, it was felt that, in assessing and quantifying responses, it was more appropriate to exclude MARAD, since the potential for political influences on decisions was greater than that in banks. The total number of banks for which detailed responses were obtained was thus taken as 17. Given that at the time of the survey (September 1982–December 1983), the Fairplay Shipping Year Book listed only 43 banks in the world with shipping interests, such a number represents a substantial

proportion of the world's banks with shipping interests. A further point of considerable importance, already referred to in Chapter 5 (on methodology), is that a high degree of consistency was found in the answers to questions. The pilot study for banks was thus extended into the main study and the results are contained in this chapter. With regard to the sample size, given the high degree of consistency found, it was decided that little more information would be obtained by extending the survey beyond the numbers already referred to, given the geographical limitations of this project. The banks included covered the UK, the USA, Scandinavia and Ireland. Whether the findings of this survey can be generalised to cover other parts of the world is a debatable point, since, of necessity, no interviews were conducted with banks from other parts of the world. Nonetheless, many of the banks with which interviews were held have offices in parts of the world other than those covered in this survey, and it seems unlikely that practice will vary significantly in different branches of the same bank.

1.3 Basis of the questioning

As with the main survey, the survey of banks was based upon an approach using structured interviews, hence, while respondents were encouraged to discuss issues and approaches in a wide ranging way, all the interviews focussed certain parts of the discussion, by specifically asking questions in the areas given below:

(i) Distinguishing features of the industry

Banks were asked to identify those aspects (if any) of the shipping industry which distinguished it from other industries, which might require special treatment by lending bankers. The main purpose of this question was to establish whether or not the particular industry under consideration did have characteristics which effectively differentiated it from other industries. The identification of distinguishing features might explain different behaviour patterns in both lenders and borrowers. The absence of distinguishing features would make the results of the survey more capable of generalisation to other industries.

(ii) Organisation and allocation of funds within banks

Banks were asked to identify whether they had specialist divisions dealing with shipping, and whether a specific amount of funds was set aside for shipping transactions. This was considered useful in establishing the degree of commitment each bank had to the shipping industry, and the extent to which

specialist knowledge of the industry was likely to exist within the bank.

(iii) Basis of lending

Banks were then asked whether loans were given on the basis of assets, or whether general loans could be made. This question was asked principally because the shipping industry appeared to be largely asset financed, whereas the financing of other industries appeared to be balance sheet oriented. Such a difference in approach could have considerable implications for corporate investment and financing decisions. Some clarification with regard to actual bank practice was thus deemed appropriate.

(iv) Information sought and used by banks

The banks were then asked to provide an indication of the kind of information they would look for from a shipping company, to support a request for assistance with the acquisition of a vessel. In particular, they were asked whether they expected companies to provide estimates of:

- (a) world trade
- (b) other economic indicators, e.g. GDP etc.
- (c) estimates of trade in the particular category in which the vessel was to operate
- (d) operating costs
- (e) operating revenues
- (f) disposal values
- (g) cash flow forecasts (and the period of such forecasts)

If a different approach were taken depending upon the type of vessel to be acquired, or its intended use, banks were asked to give reasons for the differences.

The rationale for such a question was to identify bank expectations in the area, since such expectations might well have knock-on effects in terms of project appraisal by the borrowing corporation.

The banks were also asked to identify the type of information currently available from within, which would be incorporated into an analysis.

(v) Types of finance

Detailed questions were asked about the categories of finance available, the proportions which typically would be financed, the maximum proportions which would be financed, and the periods of such finance, for both new and second hand vessels. Questions covered loans, leases, hire purchase, equity and convertibles, and banks were asked to specify other forms of finance provided for the industry.

They were also asked to detail any restrictions which might apply, or would be likely to apply, to any of these forms of finance. All of these are issues likely to be of considerable relevance to a company in considering its investment and financing decisions.

As the study progressed more detailed questions were asked about leasing. In later interviews detailed questions were included as follows:

- (a) Are different criteria used in considering a request for a lease, from those used in considering a request for a loan?
- (b) Is a lease seen as being different to a loan, in terms of perceived risk, from the viewpoint of both the bank and the lessee?
- (c) Is leasing typically arranged for longer periods than loans?
- (d) Are security requirements different for a lease to those required for a loan?
- (e) Does leasing increase likely debt capacity?
- (vi) Trends

The banks were then asked to identify any major trends which had occurred over the last decade, with regard to the types of finance offered by them, and also about their expectations for the next decade. They were asked if they considered whether there was scope for any new form of finance specifically related to shipping. The purpose of this area of questioning was to ascertain the direction and extent of changes in bank financing in recent years, and to identify any further changes considered possible or likely. All banks were asked if they provided any equity for shipping purposes, and whether a greater equity involvement was likely to be considered.

(vii) Security

All banks were asked to provide details of the security generally looked for with regard to any vessel acquisition proposal. Details of covenants, required accounting ratios, etc., were also sought, particularly those relating to interest cover and liquidity. Clearly any such covenants or ratio requirements need to be incorporated into any appraisal carried out within the client companies.

(viii) Capital Structure

Detailed questions were asked about capital structure. Specifically, banks were asked whether they considered that optimal capital structures existed for the industry or particular organisations within it. Considerable discussions took place in all banks on gearing levels, and the possible impact of different gearing levels on both the availability and cost of borrowing. Given the importance of debt to

the shipping industry, this area of questioning was considered to be most important, since it seems highly likely that bank views will be fairly rapidly communicated to borrowers. If banks do have a clear view on capital structure, and do change the supply and cost of funds to any marked extent in response to differences in gearing levels, there are likely to be significant implications for the capital structure of individual corporations. Conversely, if banks attitudes to lending do not change significantly in terms of either the amount they are prepared to lend, or the "price" of such lending, as gearing changes, there are equally interesting implications for the debate on capital structures.

As has been pointed out, not all banks identified all of these eight areas as particularly important. Probably the first two areas identified above provided the greatest scope for differences of opinion. Certainly, as will be seen, the importance of asset finance may be more apparent than real. An extremely important point which must be borne in mind, in any analysis of bank behaviour, is that different banks have rather different clientele. Certain banks, e.g. Morgan, concentrate primarily on the large, corporate borrower. To such banks the importance of asset based finance, and of "individuals" in the lending process, is likely to be minimal. Other banks specialise in different markets - e.g. Williams and Glynn have had considerable interests in, and experience of, the Greek market over a long period of time. While the differences identified between banks were insufficient to justify separate categorisation, the implications of different target clientele need to be recognised. At the corporate end of the clientele range, emphasis was typically placed on quality earnings, corporate lending, and fairly detailed information flows from client to bank. In the Greek sector the emphasis is likely to be placed on track record in terms of success and integrity of the individual owners, and asset finance is more likely to be used. A variety of intermediate stages are possible.

2. Summary of Findings

2.1 Distinguishing features of the industry

A variety of features were identified in the discussions, some dealing with the industry itself, others dealing with particular aspects of financing. A considerable amount of consistency was found, although occasionally differences of opinion were expressed. The most important features identified

were broadly as follows:

- (i) The asset (i.e. the ship, rig, etc.) can typically be sold fairly easily and quickly, although the price is subject to all the vagaries of a highly competitive market. Assets of this type are more likely to be associated with asset-based loans than assets such as plant and machinery, and typically are likely to provide better security than such assets in the event of a default.
- (ii) The importance of "individuals" in the lending process, with several banks (though by no means all) placing great emphasis on things such as integrity and honesty as they relate to individuals. Decision making in shipping was frequently seen as being somewhat more "entrepreneurial" than in other industries.
- (iii) High levels of gearing, either corporate or in relation to specific assets, partly influenced by the large amounts of subsidised credit available to preserve shipbuilding capacity.
- (iv) Conditions of volatility in the industry.
- (v) The disparity between loan periods typically available to shipowners, and the life of the vessels themselves. This imposes serious liquidity pressures on borrowing shipowners in the early years of a vessels ownership.

2.2 Organisation and allocation of funds within Banks

Of the 17 banks included, 13 had specialist departments dealing with shipping transactions. Of the four which did not, one had actually closed down its specialist division, on the grounds that *"too many staff were trying to do deals"*. A more conservative approach was being adopted to shipping by this particular bank, and the closure of the specialist division was consistent with this approach. The 13 banks with specialist divisions appeared to have a commitment to the shipping markets, or at least to certain sectors, and typically displayed a fairly detailed understanding of such markets. None of the banks providing answers to the question on allocation of funds within the bank worked to a set allocation of funds for shipping transactions. One bank made it very clear that it regarded an allocative policy as inconsistent with good lending practice.

"Because it (the bank) doesn't have an allocative philosophy, decision making is based upon what is good lending practice, as opposed to how much we want to be in any one industry."

No other bank expressed views in quite this way, though the absence of an allocative policy tends to

provide implicit support for such a view. Six banks stated that there was a limit to the amount they would be prepared to invest in the industry in total. Sometimes this was expressed as an absolute limit (e.g. \$750M). More typically it was expressed as a percentage of total advances. In no case had a limit of this type posed any effective constraints, so answers tended to be somewhat hypothetical. Indeed it is possible that other banks which did not specify a limit, might well have some kind of limit beyond which they would not go. Such banks may well have been sufficiently far within any notional limit not to attach any significance to the idea, and to regard the question as hypothetical. It is interesting to note that only one bank explicitly stated that no overall limit existed. A small number of banks indicated that they imposed limits on the amounts they would be prepared to lend to individual customers. (e.g. not more than \$40M).

2.3 Basis of lending

Very few cases were found in which lending was made without being formally linked to the purchase of a particular asset, and secured on that asset. However, six banks made it very clear that their lending was effectively on a corporate or personal basis, subsequently, and formally, backed by an asset. One of these banks expressed its view as follows:

"If we're happy lending on an unsecured basis, we'll lend on a secured basis."

Another made the following observation:

"We always insist on knowing the debt position for the rest of the fleet, because there's no sense in having your ship as a clean project if he (the owner) has trouble with others. Sure you can take possession of the ship .. but it's not a healthy situation if the owner is in trouble."

Three other banks made it clear that they would take a similar view, under certain conditions, but that asset loans were also possible. Asset based finance was typically associated with small or medium companies, or with projects with fairly certain earnings (e.g. with long term charters). Even in such cases the point was often made that personal or corporate guarantees would be required. Loans assessed on a corporate basis and subsequently secured on an asset were more typical for large corporations and the liner trades. The bulk trades were typically financed on an asset base. The earlier comments on the type of clientele associated with particular banks have relevance in this area.

Even where asset finance was used, knowledge of total corporate (or individual owners) position was often an implicit factor in decisions, as was the potential for fee income or other income. For

example, one bank made the following observation, having already made clear that its finance was typically asset based.

"If I've got a chap whose got \$20M. on deposit here, and he buys a ship for \$5M. and says 'Can I borrow \$6M?' ... I'm fairly likely to say 'Yes'; if the result of saying 'No' is going to be that he removes his \$20M. deposit and does all his business with someone else."

Clearly in reality rather more is likely to be taken into account than simply figures relating to single projects, even where asset finance is the principal form of finance.

2.4 Information Sought and Used by Banks

A high degree of consistency was found in this area, although clearly differences of emphasis existed. Few banks expected clients to provide detailed estimates of macro-economic or related indicators, though in some cases discussions clearly took place on such issues, in broad terms, or on the underlying assumptions made by owners in such areas. In a number of cases banks took the view that such indicators would be available within the bank, and little useful purpose would be achieved by requiring them from prospective borrowers. One bank nevertheless said that it would be more favourably inclined to potential borrowers who did provide such estimates. Expectations were generally higher for companies involved in the liner trades.

Detailed estimates of operating costs were expected by eleven of the banks. In a few cases these were estimates covering only the near future (i.e. the next year or so.) In others cost estimates were expected for longer periods. Only approximately half of these banks also expected estimates of revenues to be given. Where charters existed revenue estimates could be, and typically were, incorporated into the figures required. In the absence of charters, however, most banks seemed to feel that an insistence on detailed revenue estimates was not particularly useful. Where forecasts were required it was typically made clear that banks did not expect such figures to be accurate. For example, one bank which did require cash flow projections from the owner justified this requirement as follows:

"We want the owner to show us he's thought about it (i.e. the project) ... It's not an act of faith.. It's a requirement that the owner shows he's capable of thinking about it."

Very few banks expected estimates of disposal values of assets. In general it must be said that bank expectations with regard to forecasts were fairly low, and somewhat variable. Only four banks

appeared to expect anything in the way of sensitivity analysis from prospective borrowers.

Considerable consistency was displayed with regard to information regarding track record, current financial position, vessel details, and details of debt. Virtually all of the banks required some evidence with regard to track record. In a small number of cases this related even to results of individual vessels. Fifteen of the 17 banks normally expected past and current financial accounts to be available, and there is little doubt that most were now obtaining them. A small number of banks made it clear that they would not lend without having the facility to examine past accounts.

Most of the banks required a clear indication of the use to which the vessels or related assets being financed would actually be put, together with details of these assets themselves. Less emphasis was placed on this for liner vessels or vessels operating in a pool or consortia. Ten of the banks required details of the overall debt (and leasing) commitments of any prospective borrower. Eleven required details of the entire fleet, its current use, and associated charters. Seven banks specifically referred to expectations about liquidity levels or related information on liquidity. This latter emphasis reflects the seriously depressed state of the market at the time of the interviews, with many owners operating ships at a loss, and no clear sign of any change in circumstances for some time to come. Under such circumstances banks are clearly interested in the ability of an owner to survive several years of poor freight rates.

A number of other expectations were identified in the course of the discussions, often on an individual basis. For example, one bank indicated that it would expect information on the ownership of the corporations shares and on the location of the corporation itself, and would require bank references (if the applicant was not already a client). Others made reference to expectations about shareholder or owners guarantees. One bank, in explaining its philosophy of *"no surprises"*, expanded this by saying that potential borrowers had to display a willingness to provide information on contingent liabilities and any constraints on further equity which might exist. A small number placed considerable emphasis on the ability of potential borrowers to display a commitment to the industry.

While a high degree of consistency existed overall, differences arose with regard to the amount of detailed information looked for by banks, according to the type of venture being proposed. Loans related to the liner trades were typically associated with greater emphasis on corporate track record, and with the liner trade or route as a whole, rather than on figures for individual ships. For the bulk trades the emphasis was more on figures for individual ships, backed up by an overall view on

corporate security. Loans for specialist vessels were typically associated with a very detailed analysis of track record in the area, and more emphasis on a guaranteed usage.

Not surprisingly, every bank in the survey had access to a great deal of general information on the shipping industry or relevant parts of that industry. This was typically obtained through a variety of magazines, books, statistical surveys and related reports. Most spent a lot of time in discussions with owners and brokers. Informal communication networks were clearly important, as is evidenced by the following observation:

"It's a market where we all talk to each other. More than almost any banking market it's one where the banks, the brokers, meet and exchange. They almost, almost breach confidences..."

Clearly a detailed understanding of the fundamentals of the business existed in all cases. Thereafter rather less consistency was found. Only four banks appeared to prepare detailed industry forecasts. These, and three others, kept detailed files on individual sectors of the shipping market. Eight kept detailed customer files, into which any information gleaned from the press or other sources was put. (Clearly all banks would of necessity have detailed customer files, recording transactions between the bank and customers. The above files were more extensive than this, and made use of a greater variety of sources.)

2.5 Types of Finance

Loans were the most common form of finance provided by the banks. Typically loans were arranged for 50-80% of the cost of a vessel, over periods from 5-10 years. Higher percentages and longer periods could be obtained. For example, one bank stated that it would provide 100% finance over 12 years for a new vessel on charter to say, Exxon, for the period of the loan. These higher figures could only be achieved if additional security could be provided.

A number of broadly based guidelines with regard to the amount and length of loans were referred to in the course of the discussions. These included such things as:

- (i) 50% of the value of the ships for a period not greater than the time to the next special survey
- (ii) no debt to be outstanding on a vessel by the time it was 15-17 years old
- (iii) for second hand vessels, one half of the value for half of its expected remaining life.

Refinancing was fairly common, and provided a useful means of extending loan periods. Moratoria on

loan repayments in the early years were also found in a number of banks.

Leases had been arranged by all but two of the banks. However seven of the banks made it clear that leasing was either not a large part of their business, or that they were effectively acting as agents for other providers of finance. In practice this did not appear to lead to any significant change in the analysis carried out by the banks. Only two banks stated that different criteria were used in considering a lease application, as compared with a loan application. One of these made the point that since it was acting as an agent for providers of finance who had no knowledge of shipping, it was looking for a *"totally secure package"*, supported by guarantees, since the maximum exposure on a lease is typically more than the cost of the vessel itself. Most leases were effectively tax leases. Almost all were for periods of 12-15 years, a period which was greater than that typically obtained for loans. In general leases were only given to *"blue chip"* companies. Several banks made general observations on leasing. Some pointed out the problems caused by leasing, for shipowners, in terms of loss of flexibility. Penalty clauses were typically severe. Tax repayment was identified as a particular problem if a deal goes wrong. Several banks required slightly more security for a lease, as compared with a loan. Only two banks saw the use of leasing as a way of increasing corporate debt capacity. In neither case was a significant change seen, but the longer periods associated with leasing impose less severe debt service requirements, facilitating some small increase in debt potential. No other bank perceived leasing as a means of increasing debt capacity. The major advantages of leasing appeared to be 100% financing, over longer periods.

The use of Hire Purchase in the shipping industry appeared to be almost non-existent, as was the use of convertibles.

Seven banks indicated that they had actually put in equity into certain ventures. Typically the amounts involved were small, and such transactions were rare, in spite of the fact that a number of banks had seriously discussed the provision of greater equity finance. Virtually all of the banks made it clear that greater provision of equity finance was unlikely.

Interestingly, a number of cynical observations were made by bankers not involved in equity provision. The gist of these comments was generally that moves to provide greater equity had been forced onto certain banks as a result of bad lending decisions. For example, on being told that certain banks had stated that they had an involvement (albeit slight) in equity provision, one banker observed:

"They may be blowing a little bit of smoke at you, because that kind of decision recently is the result of bad loans ... The owner who's a good owner, doesn't have to give up equity to raise his financing ... the industry's never been short of capital. So if you're going to have to take equity in a deal, or a guy's prepared to give up equity, it's probably not the best of loans."

There is insufficient evidence to ascertain whether such a comment is fair or true. The fact that such a comment can be made in this way, however, indicates that certain banks clearly have no intention of providing equity.

2.6 Trends identified

In the discussions on past and expected trends a variety of ideas were put forward, covering both market trends, and trends in banking. The most commonly identified market trends over recent years were as follows:

- (i) increased market volatility/reduction in quality of earnings
- (ii) oversupply in certain sectors/poor freight rates
- (iii) markets more segmented/specialised
- (iv) many of the major participants were leaving the market
- (v) medium sized companies being squeezed
- (vi) higher cost of vessels/lack of appropriate equity support
- (vii) changes in the liner trades
- (viii) greater emphasis on fuel efficiency
- (ix) greater intervention by Government/UNCTAD

These trends were generally expected to continue over the next few years.

With regard to banking practice and procedures the following recent trends were identified:

- (i) more detailed customer investigation and greater reliance on track record
- (ii) more conservative attitudes towards security and lending
- (iii) more emphasis on Euromarkets and mixed currency loans
- (iv) higher proportions lent, for longer periods
- (v) more use of moratoria and grace periods
- (vi) less guaranteed usage, so greater problems of security
- (vii) owners shop around more/decreased spreads

(viii) changes in the approach to syndication, though some banks were now more likely to syndicate than they had been, while others were now less likely to do so.

Many of these trends were also expected to continue over the next decade. It was clearly recognised that current (and expected) market conditions were making it much more difficult for banks to negotiate secure long term contracts. A number of banks were moving away from one-off deals to a more "corporate" approach to financing and the provision of financial services. Some banks expected further developments in the provision of equity finance from banks, managed funds, or public issues, though earlier comments make it clear that in reality further such funds are unlikely to be provided in any quantity by the banks. Several banks cited interest rates as a problem, and expected to introduce forms of finance which included some maximum interest rate, in return for some kind of *"equity kicker"* at the end. Overall, however, few banks identified any major new developments in the field of ship finance which they expected to come on stream over the next decade.

2.7 Security

Security required by banks tended to follow a fairly consistent pattern, although variations clearly existed depending upon the type of customer and the type of deal. All of the banks typically required a first mortgage on any asset being financed, irrespective of any comments made concerning a corporate approach to lending. Approximately two thirds typically required an assignment of earnings and/or insurance. Ten of the 17 banks usually looked for corporate or personal guarantees. Most imposed covenants of some kind, typically relating the market value of the secured asset to the debt outstanding. Figures of 125-150% for this covenant were normal. A small number of banks referred to other security they might look for in particular circumstances. These included second mortgages, pledges of shares, and blocked deposits or interest bearing collateral.

2.8 Accounting Ratios and Capital Structure

In discussions on credit analysis questions were raised about the use of accounting ratios, and specifically, whether targets or minimum requirements existed, for such things as interest cover, liquidity and working capital levels, and debt/equity ratios. Overall it was apparent that there were few cases where clear targets existed, although in many cases a standard credit analysis was carried

out, and the usual ratios calculated. Overall a high degree of cynicism appeared to exist in this area, with one executive stating, *"I hate those ratios"*. Another regarded shipping as *"one of the least susceptible (industries) to ordinary financial statement analysis"*. The most consistent areas identified for detailed analysis were liquidity and the ability to service debt, but the underlying theme of most of the discussions was that the calculation of ratios was a relatively small part of this analysis.

Specific questions were asked about capital structure ratios. The earlier references to covenants relating market values to debt outstanding indicate a clear concern with the relationship between debt and security. The same ideas were frequently encountered in discussing overall debt/equity ratios. To be meaningful, debt/equity ratios would need to be expressed in terms which reflected the current market value of the assets. Yet such figures are subject to significant changes in a volatile market, even in the short term, making debt/equity ratios a quite volatile measuring device. Under these circumstances it is thus not surprising that no bank concerned itself with ideas of optimal capital structure. Indeed, 14 banks indicated that there were no clear limits with regard to overall debt/equity ratios. In the remaining cases typical maximum debt/equity ratios were 50-60%, though even in these cases the figures quoted were seen as general indicators only. Most banks preferred to look at broad indicators of the relationship between earnings, market value of assets, and debt service, rather than at debt/equity ratios per se. The type of client, the type of trade (and hence the quality of earnings), interest rates, the extent to which corporate or individual back-up was available, were all factors influencing attitudes towards overall debt levels. Hence companies trading mostly on the spot market would be in a very different position to those trading with long term charters to reliable companies or governments.

A further interesting aspect of the capital structure debate concerns the pricing of loans. No evidence was found of spreads increasing significantly as debt/equity ratios rose. Where spreads were identified, figures of 1 1/2 - 2% were typically expected. Owners were seen as being particularly efficient at keeping spreads low, by hard bargaining based upon sound knowledge of what was currently being obtained elsewhere in the industry. Additionally competition within the banking sector is fierce. Taken together the effect on spreads is predictable.

Such a view on pricing has undoubted knock-on effects in terms of quantity. If pricing is relatively low, one might expect the availability of funds to be low. In considering this issue it is worth

reconsidering the type of clientele associated with particular banks, a point already made. For example, a large bank dealing mainly in corporate loans has no reason to lend to a shipping company under any different conditions to those associated with loans to companies in other industries. An executive in one such bank expressed his view as follows:

"Whenever I make a shipping loan I also think about the allocation of the banks capital, though I don't have restrictions. I allocate capital by price and also by credit quality. I know that I can put as much money out into the corporate world as I want, at a particular price, and it's below 1/1, and I can't get any more than say 1 1/2% (Spread) on the loans I'm making, so why should I be much more than 1/1 if I can't get any more out of it."

In fact this bank made it clear that debt/equity ratios were not seen as a particularly effective measure of credit quality or risk, but the implication of the above statement is nonetheless clear, namely that further credit simply will not be extended beyond a certain point. This same bank made it abundantly clear that it was only interested in certain kinds of owners, and would be very selective in its approach.

"I don't want to stay awake at night wondering whether someone's going to pay me in three days. Spreads on our types of loan are so slim that it's not worth having a deal with the other types (or owner)."

Other banks with different clientele adopted rather different stances to credit quality. The net effect was to extend the amounts such banks lent to owners, with relatively marginal increases in spread. Loans of this type were typically associated with more security and a greater number of restrictive covenants, presumably to reduce the perceived risk. Virtually all the banks made it clear that if the credit risk was too great, loans simply would not be provided. This was partly due to the fact that it was considered impossible to recover a spread appropriate to such risk, and partly because the banks did not consider that lending on high risk ventures was appropriate for them.

3. Conclusions and Implications for Borrowers

In considering this chapter a clear distinction must be drawn between the aims of the owner and the aims of the banker, in terms of project or corporate analysis. The owner could reasonably be expected to have views on project and corporate profitability, as well as liquidity, financing and

survival. Hence while liquidity and financing are likely to be important facets of the decision, an inherent interest in potential profitability is almost certain to exist. The banker, on the other hand, does not have the same interest in profitability. The banker typically is interested in answering a rather more simple and fundamental question, namely, will the customer be able to service the debt in accordance with the prescribed conditions? The emphasis is thus on liquidity and debt service ability, rather than profitability. To the extent that bank finance is needed to actually carry out corporate plans, shipowners will need to be aware of bankers attitudes to certain issues, broadly outlined below, and these are likely to be a consideration within their own analytical framework.

These considerations can usefully be broken down into four main headings:

(i) Target Clientele and client relationships

Banks typically appear to be associated with certain kinds of client, and related deals spring naturally from the type of client. In most cases, but not all, banks appear to be looking for a long term relationship. Such a relationship can have considerable advantages for the customer, as is evidenced by the following statement.

"Our philosophy is that if we want to do business with an owner we want to do it on a long term basis, and we want to be there in the good times, and we're willing to be there in the bad times and help them out, as long as they're willing to make as much effort as we are ..."

The fact that banks receive considerable income from fees and charges associated with banking activities other than lending, provides further impetus for banks, and a countervailing power for owners, in terms of the possibility of transfers to other banks.

(ii) Track record

Virtually all banks identified "track record" as being an extremely important part of its client analysis. This appeared to include such things as experience and success in the industry (or appropriate sector), operating ability, and integrity - in terms of payment of debts and other contractual obligations. It must be remembered that bankers are interested more in the ability to service debt than in profitability per se. Hence it is still likely to be the case that the owner knows more about the commercial risks of a particular undertaking than the banker. The better the history of past decisions, subsequent operations and debt service, the more likely it is that high levels of confidence in the commercial judgement of that owner will continue.

(iii) Ability to service debt

The detailed analysis carried out by a bank is most likely to centre on this area. Earlier sections have made clear that even if project finance is provided, considerable emphasis is likely to be placed on the analysis of the overall corporate position. Detailed forecasts of revenues, disposal values and discounted returns were seldom expected, whereas detailed analysis of contractual obligations and operating costs were. Clearly therefore, reliance on a single project approach by a potential borrower would leave considerable gaps in the analysis from the banks viewpoint. The only exceptions to this 'corporate' approach by banks related to individual projects which could be tied in closely to a set of guaranteed earnings (e.g. a long term charter).

The earlier section on information sought and used by banks identifies a range of information sought and analysis carried out. A high degree of consistency was identified. Particular attention was paid to overall debt and other contractual obligations, overall use and potential of the entire fleet, the current and expected market situation, and levels of liquidity. Even if detailed forecasts were not expected, banks did expect potential borrowers to display a sound understanding of the markets, a reasonably secure position with regard to debt service overall, and strong liquidity. Recent market conditions have meant that greater emphasis has been put on liquidity. Overall most banks want to feel that any agreement entered into with a client will be complied with, and an emphasis on liquidity is one way of assisting this. One such view was expressed as follows:

"We put a premium on liquidity. Owners who do not have liquidity reserves that we think are prudent, we just won't deal with them, because we think he's taking too much risk. We like to go into a deal and know that it's going to end in year 5 or whatever. We don't want to get into the situation where we have to constantly restructure and restructure. If we have to do that we're not doing our job right."

In carrying out the analysis little attention appears to have been given by banks to traditional accounting ratios. Analysis related to cash flows overall, rather than to specific accounting ratios. Capital structure ratios, where calculated, were related to current market values of assets, but were not generally regarded as particularly significant per se. Clearly, from the viewpoint of the banks, the idea of optimal capital structures is of little consequence. Little evidence was found that pricing of loans was closely related to capital structure. Indeed, pricing was more closely related to security given.

(iv) Security

Borrowers must be able to provide what the bank regards as an adequate level of security for

any advances made. Projects which have higher risks tend to be associated with greater security, rather than with significantly higher interest rates.

Any company wishing to borrow needs to recognise this aspect of loan pricing. In practice security is seen as serving a number of purposes. Firstly, as already indicated, it provides a means of relating pricing to risk. Secondly, it ensures that no single loan will be lost due to its being less well secured than any other loan. Comparable security conditions are thus the banks way of keeping in the queue in the event of a default. Thirdly, security or associated covenants may provide some basis for controlling or influencing decisions within the borrowing organisation. Fourthly, adequate security does reduce the risk of loss in the event of a default on a debt servicing contract. In practice, it must be recognised that few banks ever actually foreclose on a loan, since the difficulties and problems associated with arresting a vessel are considerable, as are those of trying to operate the vessel and dispose of it, subsequent to arrest. Foreclosure is thus the ultimate sanction, and few cases ever come to this. Nevertheless, the banks have a responsibility to their own shareholders, and in the final analysis, if all other alternatives have been tried, foreclosure will result.

In practice, a division such as that shown above is somewhat artificial. An assessment of track record is an essential part of an analysis of ability to service debt. Security required is clearly affected by the kind of client and markets. The net effect is a decision making framework within banks which displays considerable consistency of approach, but where minor variations in approach or attitudes can be found at almost any time. Clearly certain issues are given a low priority. The priorities given by bankers, managers and shareholders need not, indeed almost certainly will not, be the same. Nevertheless, decision makers in shipping companies need to be aware of the views of bankers, and incorporate them somehow or another, into their planning and strategy.

Chapter 7

Shipping Companies – Pilot Study

1. Introduction

Before embarking on widespread interviews and questionnaires concerned with the attitudes and methods found in shipping companies, it was decided that a small pilot study should be undertaken, in which detailed questions would be asked, and case material sought. This study, as well as being interesting and useful in its own right, would also provide a basis for assessing the relevance of the questions posed, and therefore lay a more solid foundation for the later research.

2. Basis of the Study

Representatives of ten companies were interviewed. A number of detailed questions were asked in all cases, so as to provide a logical and coherent framework for the study. Nonetheless, those interviewed were encouraged to discuss the industry and investment appraisal and financing methods in general terms, as well as in relation to their own organisation. This they did, providing a great deal of useful background material, and provoking a certain amount of re-thinking with regard to certain areas of study. In particular, it became apparent that the study ought to include rather more on the strategic aspects of investment appraisal, and on liquidity aspects. Questions were thus subsequently amended to give these aspects greater weight. In three of the ten cases extremely detailed information was sought and obtained, through follow up interviews and procedural documentation provided. This material proved particularly important in identifying the weighting given to strategic considerations in decision making.

The ten companies included in the pilot study included:

- (i) Five large British companies, three of which were well diversified conglomerates, while the other two had diversified to a more limited extent, with the majority of their assets still in shipping.
- (ii) Two smaller British public companies, and one well established private company, all with long traditions in shipping. Two of these companies were involved primarily in bulk shipping, while the third operated in a more "entrepreneurial" fashion.
- (iii) Two Greek companies operating in a variety of trades.

The choice of companies was partly influenced by the desire to choose a balanced sample, and partly by pragmatic considerations, namely contacts. In all cases contacts and introduction permitted extremely free and open discussions.

3. Basis of the Discussions

As indicated above, discussions were fairly wide ranging. Nevertheless careful consideration was given to the structure of the interviews and to the questions asked.

The first area of questioning concerned the actual structure of the companies being interviewed. This was necessary to ascertain the importance of the shipping elements of the company, and to identify who had the responsibility for strategic decisions.

Detailed questions were then asked on the objectives of the companies, and the areas of interest, in terms of type of trade, geographical area, links with other companies, etc. Particular attention was paid to financial objectives and targets, covering such things as profits, growth, and dividends. A specific question was asked in all cases, as to the extent to which share price or wealth maximisation was seen as an objective. The aim of these questions was to ascertain the objectives which actually existed in the companies questioned, and to ascertain the extent to which the objectives put forward in finance theory were valid.

The next area of discussions concerned the main strategic issues which were considered in recent vessel acquisitions. While the main aim was to establish how investment and financing decisions are made, it was nevertheless considered important to ascertain the strategic context of decisions, since it was possible that behaviour might vary considerably depending upon the strategy actually adopted. Potential strategic issues included such things as diversification, risk reduction, replacement,

expansion and speculation. Companies were then asked about the extent to which estimates of trade levels and/or related economic indicators were made or used in reaching investment decisions. These questions covered both general indicators and estimates of particular trades, since the range of activities of the companies involved was wide, and it seemed likely that significantly different estimates would be made for different types of companies.

In order to assess the usefulness of the more traditional techniques suggested by finance theory, it was then necessary to establish the typical period for which investments would be kept in use, and the nature, type and period of any specific estimates made, or at least those which actually formed part of the investment decision process. Questions were thus asked on these areas, with specific questions being asked about estimates of operating costs, operating revenues and disposal values. In all cases a question was also asked as to whether any inflation adjustments were incorporated into the estimates, and if so, how.

Clearly one of the major aims of the thesis, certainly in the early stages, was the identification of the investment appraisal techniques actually used. Companies were thus asked if they used payback, accounting rate of return, net present value, internal rate of return/yield, or any other techniques. They were then encouraged to discuss the context in which these techniques were used, and to indicate their importance. In the pilot study no attempt was made to rank these techniques, or to apply any quantitative measurement of their perceived usefulness. The results of the pilot study suggested that this would have been extremely difficult, and almost certainly inappropriate, as will be discussed later.

The next stage of questioning covered the area of risk and uncertainty, factors possibly of more significance in the shipping industry than most industries, given the volatile market conditions described in chapter 2. Questions were asked about the use of a variety of techniques for assisting with project risk (e.g. sensitivity analysis), and also about any overall approach to corporate risk. Given the international nature of the industry it was considered appropriate to ascertain the attitude towards exchange risk, and the steps taken to reduce such risk. Nevertheless, it must be admitted that the questioning in the pilot study was fairly broadly based, becoming more detailed in later interviews, as the overall picture became clearer.

Questioning then turned to the relationship, if any, between the investment and financing elements of the decision to acquire capital assets. Finance theory suggests a fairly clear division between the two elements (although the benefits of subsidised finance clearly need to be included).

Previously observed practice suggested a much closer relationship, with financing being a critical part of the final decision. The aim of the questioning in this area was thus to clarify the actual position.

The next area of questioning concerned the methods of financing capital investment. Possibilities included equity, retentions, loans, shipyard credit, leasing, hire purchase, and any other sources. Questions were then asked about the proportion of available credit actually taken up, the typical period of credit, and the security given. Answers to these questions would enable a clear picture to be drawn up of current practice in the industry. This picture may in turn have some interesting implications for the various theories proposed. Given the view put forward in chapter 1 about the shortage of equity capital in the shipping industry, particular attention was paid to establishing the extent to which equity had been considered as a means of financing new investment. Similar questions were raised with regard to newer alternatives, particularly leasing.

Questioning then turned to the general area of capital structure. A specific question was asked as to whether there was a view on the total level of debt overall, and the extent to which external funds were limited. A further specific question was asked as to whether companies worked towards the achievement of a particular long run capital structure, which was broadly adhered to over time. If there were such a structure, companies were asked to identify the target debt/equity ratio as a percentage. Answers to these questions were expected to make it possible to assess the practical relevance of theories regarding optimal capital structure.

As with all the questions, encouragement was given to discuss issues in broad terms, so as to provide a better picture of the logic behind particular decisions, and to ascertain the range of contributory factors to the final capital structure. Supporting questions were also asked on such things as other ratios considered to be of vital importance, e.g. interest coverage, liquidity ratios, etc. A question was asked about the perception of leasing in terms of capital structure ratios and debt capacity. A specific question was also asked as to whether, in considering the level of debt, any attempt was made to assess the impact of changes therein on the value of ordinary shares.

The final area of questioning concerned the choice of an appropriate discount rate, where discounting techniques were actually used. Companies were asked to identify the rate of discount they were using, and to indicate the basis for the calculation of this rate. Possibilities envisaged included the weighted average cost of capital (theoretically justifiable if an optimal capital structure was being achieved), a minimum cut off rate (based on CAPM or a more ad hoc approach), the interest rate on the

loan (clearly incorrect but equally clearly used by some companies and banks).

Reference to the literature review chapters should make it apparent that the pilot study was initially aimed at assessing the perceived relevance and therefore practical usefulness of the theories and techniques found in most standard finance texts. Some clear cut answers could be obtained to specific questions, and these would provide an initial assessment to be made. The sample could then be widened to make a more systematic survey if this were considered appropriate. However, as had already been indicated, while the discussions did cover certain specific points, those interviewed were encouraged to discuss issues in a much broader way, with a view to identifying further areas of interest which warranted a more detailed analysis. The detailed interviews which were to follow might need to be modified in the light of the results of the pilot study.

4. Results of the Pilot Study

While a sample of this size was insufficient to come to any definite conclusions, certain general trends were found to be common to the majority of the companies in the pilot study. These are dealt with in section 5 below.

Besides these general trends, the pilot study further suggested that different behaviour patterns existed in different types of company. It was therefore felt that some kind of categorisation of companies would enable the conclusions reached to be more detailed, and would facilitate the analysis of behaviour, and possibly the building of a number of models. Initially three distinct categories were identified, namely:

- (i) widely held public companies;
- (ii) closely held or small public companies or private companies of a good size;
- (iii) Greek or "entrepreneurial" companies.

A broad summary of behaviour was then drawn up for each of these categories, and these are also detailed below in sections 6, 7 and 8 of this chapter. These three summaries then form the basis of the subsequent chapters, where the aim is to further refine and develop the analysis outlined in this Chapter. The analysis for category 1 companies is developed in Chapter 8, category 2 in Chapter 9,

category 3 in Chapter 10. Chapter 11 summarises the preceding three chapters and focuses on similarities and differences between the categories.

5. General Characteristics of Shipping Companies

Corporate structures differed significantly across the ten companies in the pilot study, and areas of activity were equally diverse, as will be pointed out in the subsequent analysis by category. Nevertheless, it was clear that many of the companies included had clear market objectives, with well defined areas of involvement, at least with regard to their shipping activities, particularly in terms of the type of trade, and, to a lesser extent, their geographical area of operation. It was also evident that overall strategic factors appeared to be of vital importance in considering investment decisions.

Less consistency was found with regard to objectives. The only common feature was that maximisation of shareholders wealth was not seen as an operational objective in any of the companies, though in some companies such an objective was considered to be theoretically desirable. Differences in the size and nature of companies and their activities appeared to be an important variable, a fact which will be discussed more fully in later sections.

Real difficulties were seen to exist in the industry with regard to forecasting. The features of the industry outlined in Chapter 2, particularly those relating to the complexity of the industry and its volatility, make the forecasting of revenues and the sale value of vessels especially difficult. (Generally costs were known with much more accuracy). This problem with regard to forecasting provided a considerable disincentive to the use of discounting techniques, since forecasts for more than a few years ahead have little credibility. In fact discounting techniques were not used with any degree of consistency. Even where they were used, most projects were carefully considered in relation to the achievement of strategic objectives, and discounting techniques would only be used once other considerations had been satisfied. Where discounting techniques were used results were generally presented in terms of Internal Rate of Return. NPV was very seldom used.

All companies were very concerned with the liquidity aspects of their investment decisions, although rather different emphasis was found from one company to another. Certainly the identification of the potential cash flow effects of projects on total corporate cash flows was generally considered

important. However, while some considerable doubts exist about future revenues, repayments of principal and interest can be forecast with reasonable accuracy (though the interest rate fluctuations of recent years have made even this more difficult). Emphasis, therefore, tended to be given to potential liquidity problems associated with debt servicing.

In considering plans the financial accounting framework was of undoubted importance, with forecast profit and loss accounts and Balance Sheets being prepared in a number of cases. Coupled to this was the calculation of certain accounting ratios. The degree of sophistication of such forecasts varied considerably in this area, usually in line with company size.

Attitudes towards risk varied considerably, but techniques for dealing with it were not generally very sophisticated. Sensitivity analysis was found to be the most common method of dealing with risk. Currency exchange rate risk was generally avoided where possible. It perhaps should be pointed out that all interviews to do with the pilot study took place in Britain.

The relationship between the investment and financing decisions was clearly close. In some cases the two aspects of the decision were considered to be broadly separable, but there is little doubt that in many cases, because of the amounts of subsidised credit available, the financing decision has a very considerable impact on the investment decisions.

New investment was financed almost entirely from internal funds and loans (either from yards or from commercial banks). Very little new equity (i.e. issues) has been involved, although joint ventures on a project basis were a source of small amounts of funds to one company. Leasing was perceived as a useful source of funds under certain conditions, but had not been used extensively as it reduced company flexibility, since leases could not be got out of quickly or cheaply. In many cases the maximum amount of loan finance available on new capital assets would be taken up. Typically loans were for 60-80% finance spread over 7-10 years, at interest rates of about 8 1/2%. Commercial loans carried higher rates. Depreciation on vessels is normally spread over periods between 12 and 20 years. This goes some way towards explaining why liquidity is given such emphasis, since acceptable returns (from a profitability viewpoint) may not be sufficiently large to give adequate liquidity levels to pay off debt.

In general it may be said that target capital structures were not seen to be very important, though more concern was expressed on debt/equity ratios by public companies and large private companies. The size of capital projects in shipping, coupled with traditional debt service requirements, also meant that debt/equity ratios could vary (quite significantly) from one time to another. The idea

of a single target figure was thus unrealistic. Leasing, where used, was not seen as a way of increasing debt capacity.

6. Summary of Pilot Study for Category 1 Companies

6.1 Introduction

This summary was based upon interviews with five public companies. While the conclusions were inevitably tentative at this stage, there was nonetheless a considerable measure of agreement, sufficient to suggest that further analysis along these lines would yield interesting results.

6.2 Objectives

While few companies had explicit objectives it was apparent that some broad earnings oriented objective was implicit in all cases. Often these objectives were in turn related to the amount invested in a company. The achievement of a satisfactory return on capital was considered to be the best way of achieving a satisfactory share price. This was seen as being needed for both offensive and defensive reasons. No company saw maximisation of shareholders wealth as being an operational or necessary objective.

6.3 Philosophies and Strategies

This general earnings objective tended to be applied with certain implicit philosophies and strategies in mind. Firstly, regular earnings were preferred, as opposed to speculative earnings. Companies in this category were not very interested in capital gains on ships. This approach was due to feelings of accountability and responsibility as a public company. It resulted in a tendency for investments to be long term, and also for them to be at the high technology/high quality end of the market. Such an approach, by requiring a long term and substantial commitment to an investment, also frequently results in lower effective competition, and higher quality earnings.

Diversification was seen as a way of reducing exposure to one area. However, it was generally limited, and concentrated on particular areas of business, which were clearly identifiable.

Diversification was sometimes scientific, but frequently fairly naive.

6.4 Strategic Planning and Individual Project Appraisal

Fairly sophisticated corporate planning systems were found in the companies in this category, with plans usually covering 3-5 years. The plans were typically effectively based upon a financial model consisting of the three major financial statements, namely:

- (i) Profit and Loss Statement
- (ii) Balance Sheet
- (iii) Funds Flow Statement

Projects considered were generally of two types:

- (i) those which "grew out" of the strategic plan
- (ii) "opportunistic" projects.

The first type were considered very carefully along strategic lines before individual project analysis occurred, as part of the strategic planning exercise. The second, which were much more ad hoc, usually included an analysis of the strategic considerations as an essential part of the process. In general companies were looking for a "market slot" which was consistent with the business. "Projects" often related to whole fleets or classes of ships, rather than single ships, so strategic factors were extremely important.

Projects were usually analysed on an incremental basis, as part of a fleet. Analysis of such things as supply/demand, age and capacity of the fleet etc. were thus very important aspects of the decision process. The actual evaluation of a particular project was very much the last stage in a fairly lengthy strategic planning process. The calculation of dcf returns, while commonly done, was really only a final hurdle, and not a significant part of the decision making process.

Typically, for all major projects the effect on the five year strategic plan would be worked through. This was very important because the resulting cash flows might well create undesirable problems for the overall organisation. The principal evaluation was thus the effect on group figures overall. Projects which produced unfavourable earnings or cash flows in odd years were frequently rejected even though dcf returns were high.

6.5 Risk and Uncertainty

Very little project risk analysis was carried out. Where such analyses were done they tended to move from the certain to the less certain, with an emphasis on sensitivity analysis and the identification of critical variables on which judgements could be made. Probabilities were seldom used. In the main, concern was with the risk of adverse effects on overall company results, and the analysis concentrated on these, notably liquidity risk and revenue risk. Most companies were concerned principally with downside risk, and were concerned to reduce or eliminate those projects which had significant downside risk, in terms of the overall group position. Diversification was used to reduce risk, as were such approaches as specialist markets and, where possible, more flexible tonnage. Exchange risk was generally eliminated wherever possible. When it was not possible to do this a decision not to take the risk was often made (i.e. the investment would not proceed).

6.6 Financing and Capital Structure

The investment and financing decisions appeared to be more likely to be separate the larger the group. Most companies took advantage of subsidised credit where available, but few were concerned with any extension to the loan period. Leasing was not generally favoured because tax planning was an important part of the diversification planning. Where leasing was used it was perceived as being the same as borrowing, for debt/equity purposes.

No company set target debt/equity ratios, though some implicit maxima were quoted for this ratio. In general it seemed that the positive decision variables were:

- (i) the market view
- (ii) interest coverage
- (iii) asset backing
- (iv) past experience

The debt/equity ratio was thus in practice very largely a residual or resultant figure, rather than a causal variable. However, the balance between debt and equity, in terms of the variables given above, was clearly seen as an important market consideration, and accounted for a number of very important strategic decisions made by companies involved in the industry.

Weighted average cost of capital was seldom used as a discount rate.

7. Summary of Pilot Study for Category 2 Companies

7.1 Introduction

This summary was based upon only two companies, and was thus perceived as somewhat inevitably falling somewhere between categories 1 and 3. The development of a single model was thus viewed as slightly more difficult. It seemed likely that private companies would adopt a behaviour pattern somewhere between the other two, depending upon a number of factors, including such things as:

- (i) size
- (ii) commitment to the industry
- (iii) market and economic conditions
- (iv) nature of the ownership or controlling group

The summary itself is based upon a small public company and a similar sized private company, both with considerable experience and reputation in the industry.

7.2 Objectives

Objectives tended to be implicit, rather than explicit. Hence specific financial objectives did not appear to be very important in the decision making process, though some broadly based financial objectives were implicit in the process. In general the earning of an adequate return on investment was considered desirable, but this objective was long term. In the short term the aim was generally to *"try to do the most profitable business"*. The market conditions experienced in recent years had tended to change the emphasis from profits. The single most important aim in existence at the time of the study was clearly survival. This aim manifested itself in an emphasis on liquidity and gearing, with cash flow effects being paramount. Consideration of the Profit and Loss Statement also appears to be secondary to that of the Balance Sheet and gearing.

7.3 Philosophies and Strategies

The companies in this category tended to be rather more committed to the industry than those of category 1, with shipping assets tending to be a much larger proportion of total assets than for

category 1 companies. Some diversification existed, but it was of relatively limited importance. Even within shipping a certain amount of specialisation was common and a very clear view usually existed of the type of trade within which the company wished to be involved. This provided a set of constraints which significantly limited the companies' range of action. In many cases decisions were largely forced on a company because of some prior strategic commitment to the industry or some section thereof. It is perhaps worth noting that these commitments were not always consciously arrived at, but were the result of tradition or instinct. Considerable concern existed with regard to corporate reputation through such things as good customer relations, efficiently run vessels, etc. This of course is influenced by the factors referred to above.

In the past there has been a tendency to invest on a long term basis, with relatively little regard for ship values and speculative profits in ships. This process is beginning to change, though some resistance still exists. The move is one of necessity rather than choice.

Companies in this category, recognising that they needed some advantage in order to be able to compete effectively, generally aimed to have ships which were the most efficient and technologically advanced of their type. Considerable emphasis was thus placed on obtaining the right ship (or ships) to provide a competitive advantage, but where, if the going gets tough the *"asset is always substantially capable of being sold to pay off debt"*. Market conditions in recent years have made this more difficult to achieve, but the overall philosophy remains.

Given their exposure to the markets, one of the most important considerations in investment decisions was the preservation of flexibility. This was typically reflected in the careful balancing of the fleet, in terms of size and type, or in the acquisition of handy sized, general purpose ships.

Taxation planning was an extremely important factor in the investment decision. Dividend patterns, while different from one company to the next, displayed considerable consistency over time, and were generally a consideration in considering investment decisions.

7.4 Strategic Planning and Individual Project Appraisal

Individual project appraisal clearly took place in the context of the philosophical and strategic issues raised above, although calculations were then typically made which relate specifically to the project itself. In making investment decisions considerable attention was normally given to world

supply and demand figures for detailed categories of vessels. When coupled with information on new buildings, scrappings, and estimates of world trade, a picture of the industry could be built up which would help to identify areas of shipping which were in the most scarce supply relative to expected demands. Subsequent analysis could further refine this.

Because of the uncertainties involved with the industry, forecasts are extremely difficult to make, so traditional investment appraisal methods did not currently carry very much weight in the decision making process. Typically, good estimates of costs could be made for several years ahead, but revenues were difficult to forecast for more than one or two years. No real attempt was typically made to quantify expected revenues beyond this. On the basis of the short term expectations about operating costs, which as was pointed out earlier, can usually be estimated fairly accurately, the breakeven daily rate was calculated. Cost escalation was then assumed, to calculate expected breakeven rates further on in time. These current and expected breakeven rates could then be compared with current and expected charter rates. A judgement about the probability of achieving such rates was then made, providing one variable in the decision making process.

Because of the pre-occupation with survival, manifested in a close concern with liquidity and gearing, detailed estimates of the costs of servicing debt were made, covering several years ahead. It should also be noted that in calculating the breakeven rates referred to in the last section, loan interest and principal repayments were included with operating costs. Hence the breakeven point calculated was effectively a cash flow break even point.

7.5 Risk and Uncertainty

As mentioned in section 7.3 above, some limited diversification was typically found, and this has helped smooth out earnings to a certain extent. Nevertheless, the preponderance of activities was still typically shipping or marine related. Within shipping, risk was usually reduced by careful fleet balancing and/or the use of advanced, handy sized vessels of considerable flexibility. It should perhaps be noted that such a policy may give a relative advantage and not an absolute advantage, with very considerable risk remaining in the sector.

No formalised or analytical models for dealing with risk were found.

7.6 Financing and Capital Structure

For category 2 companies the investment and financing aspects of the decision were closely inter-related. In general decisions were composite, and the separation of the two aspects implicit in the finance literature is thus far from clear cut.

In recent years vessels have been very largely financed from loan, typically with 80% finance being used, over 8-10 year periods. Longer periods would generally be preferred, but are not usually available. Typically the maximum amount of finance available would be taken up. Leasing was not seen as particularly useful, partly because tax planning plays such an important part in the investment process, but also because leasing reduces corporate flexibility with regard to selling a vessel. The longer periods associated with leases were seen as attractive, but the disadvantages referred to above carried more weight.

All companies were concerned about their ability to continue to service debt in an extremely volatile industry. However, that is not the same as saying that they had any kind of target capital structure. Limits generally existed with regard to the total amount of debt taken up, but the ratio of debt to equity was not a fixed ratio, but was dependent upon interest rates, security requirements and liquidity considerations. Because of the high cost of new vessels a new acquisition was inevitably likely to change the debt/equity ratio quite significantly.

8. Summary of Pilot Study for Category 3 Companies

8.1 Introduction

This summary is based upon a small British public company considered to act in an "entrepreneurial" way, and two London based Greek companies.

8.2 Objectives

Generally organisations interviewed appeared to be very concerned with the creation and increase of wealth. This increase in wealth could be achieved in a number of ways, but in the main it

supply and demand figures for detailed categories of vessels. When coupled with information on new buildings, scrappings, and estimates of world trade, a picture of the industry could be built up which would help to identify areas of shipping which were in the most scarce supply relative to expected demands. Subsequent analysis could further refine this.

Because of the uncertainties involved with the industry, forecasts are extremely difficult to make, so traditional investment appraisal methods did not currently carry very much weight in the decision making process. Typically, good estimates of costs could be made for several years ahead, but revenues were difficult to forecast for more than one or two years. No real attempt was typically made to quantify expected revenues beyond this. On the basis of the short term expectations about operating costs, which as was pointed out earlier, can usually be estimated fairly accurately, the breakeven daily rate was calculated. Cost escalation was then assumed, to calculate expected breakeven rates further on in time. These current and expected breakeven rates could then be compared with current and expected charter rates. A judgement about the probability of achieving such rates was then made, providing one variable in the decision making process.

Because of the pre-occupation with survival, manifested in a close concern with liquidity and gearing, detailed estimates of the costs of servicing debt were made, covering several years ahead. It should also be noted that in calculating the breakeven rates referred to in the last section, loan interest and principal repayments were included with operating costs. Hence the breakeven point calculated was effectively a cash flow break even point.

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As mentioned in section 7.3 above, some limited diversification was typically found, and this has helped smooth out earnings to a certain extent. Nevertheless, the preponderance of activities was still typically shipping or marine related. Within shipping, risk was usually reduced by careful fleet balancing and/or the use of advanced, handy sized vessels of considerable flexibility. It should perhaps be noted that such a policy may give a relative advantage and not an absolute advantage, with very considerable risk remaining in the sector.

No formalised or analytical models for dealing with risk were found.

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In the past there has been a tendency to invest on a long term basis, with relatively little regard for ship values and speculative profits in ships. This process is beginning to change, though some resistance still exists. The move is one of necessity rather than choice.

Companies in this category, recognising that they needed some advantage in order to be able to compete effectively, generally aimed to have ships which were the most efficient and technologically advanced of their type. Considerable emphasis was thus placed on obtaining the right ship (or ships) to provide a competitive advantage, but where, if the going gets tough the *"asset is always substantially capable of being sold to pay off debt"*. Market conditions in recent years have made this more difficult to achieve, but the overall philosophy remains.

Given their exposure to the markets, one of the most important considerations in investment decisions was the preservation of flexibility. This was typically reflected in the careful balancing of the fleet, in terms of size and type, or in the acquisition of handy sized, general purpose ships.

Taxation planning was an extremely important factor in the investment decision. Dividend patterns, while different from one company to the next, displayed considerable consistency over time, and were generally a consideration in considering investment decisions.

7.4 Strategic Planning and Individual Project Appraisal

Individual project appraisal clearly took place in the context of the philosophical and strategic issues raised above, although calculations were then typically made which relate specifically to the project itself. In making investment decisions considerable attention was normally given to world

seemed to be reflected in an implicit growth objective. Growth was seen as being capable of achievement in one (or combinations) of three ways:

- (i) growth in the number of ships
- (ii) larger ships
- (iii) growth through an improvement in the quality of the tonnage.

Share price maximisation was not seen as a relevant objective, since the shares themselves were not traded on any stock exchange. Some kind of implicit wealth maximisation appeared to be more important, but such an objective was seen as a long term objective, and there was not the same concern with regular earnings that was seen with category 1.

On a number of occasions decisions appear to have been made on completely non-economic grounds, with sentimentality being an often quoted reason.

8.3 Philosophies and Strategies

In considering the types of activities in which this category of company are involved it is well to remember that certain areas of shipping are largely closed to them, notably the liner trades and high technology trades. The majority of owners in this category are thus forced back to short term charters, tramping and the spot market, principally in dry cargo which means that they are subject to the vagaries of that market. The opportunity for high, regular profits is unlikely to exist, hence the preoccupation with ships as commodities. This point has certain implications for investment decisions, in that the ships that are acquired are generally those which have a wide variety of uses, and which would thus appeal to a similarly wide variety of potential customers if the market were right. A limited amount of diversification was seen as desirable, but this tended to be confined to areas within shipping, or to similar capital intensive investments, such as real estate.

The growth objectives referred to in section 8.2 were generally achieved in two ways.

- (i) By selling and buying ships at opportune times.
- (ii) By ensuring that revenues are adequate to cover operating costs and repayments of any loans and associated interest, such that at the end of a certain number of years the vessel is owned, and has a certain value.

8.4 Strategic Planning and Individual Project Appraisal

Given the findings of 8.3 it was not surprising to find that there was little emphasis placed on regular profits and therefore on regular financial statements. The concern was with:

- (i) the overall value of the fleet, and
- (ii) cash flows

Also, since many fleets are operated by a series of single ship companies, owned and controlled by individuals/families/small groups of shareholders, projects tended to be analysed individually, with the owners taking an overall view of their cash flows. Companies in this category typically did not operate a detailed planning system, mainly because their response needs to be opportunistic. Formal sections for collecting and analysing economic data were rare, but most owners had long experience of the industry, and felt confident of their ability to read the market. Accounting records were of varying degrees of sophistication, and were certainly seldom used as regular control mechanisms, which again has the effect of focusing attention on wealth (through overall asset values) and cash flow.

The overall effect of the above considerations is to put the emphasis on ensuring that purchases and sales are made at the right time, namely purchasing at or near the bottom of the market, and selling at or near the top. This emphasis on buying and selling at the right time does mean that owners need to spend a lot of time studying the market, and a lot of effort clearly goes into this area. Particular attention seems to be paid to analysis of current capacity and order books, with a view to picking out areas of under tonnage. Owners typically had a very good knowledge of freight rates, so were in a position to estimate these for at least some time ahead.

Cash considerations were extremely important in making investment decisions. All companies in this category placed great emphasis on ensuring that cash outflows associated with a ship acquisition did not place a great strain on the business in cash flow terms. Great care was taken to ensure that the companies did not go beyond their means, and most companies wanted to be in a position to repay loans out of their own assets. (Note that the above comments relate to family groups of companies. Many Greek companies are single ship companies, so some sort of informal balancing process would probably be carried out.)

8.5 Risk and Uncertainty

It is somewhat strange that, within the industry, this category is regarded as entrepreneurial or risk taking, since risks were kept to a minimum. Basically risk was reduced by the acquisition of general purpose ships, preferably with good scrap values, at times when the market is low, and unlikely to get much lower. Debt was kept to a level which was low enough to prevent any major cash flow problems. Currency risk was avoided where possible.

8.6 Financing and Capital Structure

In general the investment and financing decisions were perceived as being related.

Few owners in this category were buying new vessels, so subsidised credit was not typically available. This meant that companies looked at the amounts they were borrowing extremely carefully. The companies in this category said that they would not necessarily borrow the maximum amount available, and 50% was a typical maximum. In general companies would borrow a higher proportion when the market was low, and all were very careful when the market was high, though not many vessels were acquired in such markets. Very great emphasis was placed on the cash commitments implied by the use of loan finance, and typically no loan would be taken out which posed any problems of long term survival for the company. Unencumbered vessels could be traded at low rates for fairly long periods, whereas this is unlikely to be true for vessels with large debt. Such a policy enables vessels to be operated, even in bad times, without making a loss. Then when the market turns up, high profits can be made, often in the form of capital gains.

Leasing of vessels was not generally favoured by companies in this category, since it reduced the flexibility the company had with regard to vessel disposal.

9. Implications of the Pilot Study/Structure of Main Study

The pilot study indicates fairly clearly that investment and financing decisions take a form somewhat different to that implied by finance theory. The main points arising from the pilot study may be summarised as follows:

- (i) Behaviour patterns varied quite considerably, depending upon the size and nature of the companies concerned.
- (ii) Strategic considerations were of undoubted importance.
- (iii) A variety of philosophies and strategies were identified, which appeared to be important in reaching decisions. (These had many similarities with Brunson's "ideologies" - see page 112)
- (iv) A range of background environmental, market and financial information was collected, sometimes as part of a formal planning system, sometimes informally. The decision making process was seen as being spread over some considerable time.
- (v) Formal evaluation techniques represented only a small part of the process, and were used inconsistently. Difficulties of forecasting were a commonly cited reason for this.
- (vi) Liquidity considerations were given particular attention, and the financial accounting framework was useful in putting plans into an overall or corporate context. An assessment of the impact of projects on corporate figures was often important. Target capital structures were not seen as important, but analyses of debt service ability were common.

As has already been pointed out in the chapter on research methodology, the effect of the pilot study was to change the emphasis of the main study. While the same range of questions on finance theory could be retained, a number of additional questions and changes in emphasis were needed, so as to deal more adequately with the points referred to above. It was felt to be particularly important to incorporate more specific questioning on corporate planning and its relationship with the investment and financing decision. Additional areas of questioning were thus included, as follows :

- (i) whether a system of corporate planning existed, and if so, the period for which plans were made.
- (ii) the nature of the planning and review process
- (iii) whether a system of annual budgeting existed, and the links between the planning system, the budgeting system, and specific capital project approval.

Greater emphasis was also subsequently placed on the following areas of questioning :

- (i) the identification of the strategic issues facing a company, together with any underlying philosophies which might influence the choice of strategy.
- (ii) the range and importance of the background information used in the decision making process, and whether this was set in a corporate planning context.

The extended range of questions (set out in appendix 1) could then be applied to the three basic

categories identified in the pilot study, so as to enable a more rigorous set of models of behaviour to be built up. This is the purpose of the next three chapters, which will test, extend and develop the three basic models outlined above. The similarities and differences in attitudes and emphasis identified within the pilot study will be examined in more detail within these detailed chapters. For consistency, the same broad headings will be used for all three categories, namely:

- (i) objectives
- (ii) philosophies and strategies
- (iii) corporate planning
- (iv) project appraisal
- (v) risk in investment decisions
- (vi) financing aspects of investment decisions

A consistent approach of this type permits the development of a comparative analysis of behaviour patterns, which is found in chapter 11. This in turn provides an empirical base for assessing the practical relevance of the theory of finance, for identifying areas of overlap and linkage between finance and corporate planning and strategy, and for developing a descriptive model of investment and financing decisions in shipping.

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Chapter 8

Category 1 Companies

Large Public Companies

1. Aims and Objectives

1.1 Introduction and overall findings on objectives

As was pointed out in Chapter 3, finance theory is based upon objectives of share price maximisation. The research in this thesis enables an assessment to be made of the relevance and/or necessity of such an objective in the case of public companies in, or with interests in, the shipping industry. Further, it helps in the identification of alternative objectives, goals, philosophies and strategies. These will be discussed later in this section. This chapter is based upon a sample of 19 companies, of which 17 were large public companies, and two were large private companies acting in most respects as if they were public companies. The first point that needs to be made is that in fact identifying goals and objectives was not easy. Even where specific questions were asked, answers were seldom clear cut and unambiguous. What did soon become clear was that very few companies included in this sample had specific objectives set out in any formalised way. Careful examination of published reports indicated that while discussion of strategies was common, based upon implicit (and sometimes changing) objectives, the formal setting out of written objectives was almost non-existent. It therefore needs to be recognised that the conclusions and comments made in this section are almost entirely based upon discussions with senior executives, and not on written statements. Even where such statements exist, they tend to be very general, as indicated by the following:

"Some corporations are run for the management, some for the stockholders, and some for the public. We try to run Ogden for the stockholders and view dividends as rent which must be paid. We see dividends as more important to stockholders at this time than minor changes in pre-share earnings and we view the continuation of our dividend as our most serious obligation." (Ogden Corporation - 1982 Annual Report - P3)

The conclusions reached are also based upon a comparison of broad comments on objectives and goals, with actual strategies implemented, since these provided the best supporting evidence in determining objectives. Hence this section on aims and objectives needs to be read in close conjunction with that on philosophies and strategies.

In considering the overall aims and objectives of companies in this category, and particularly in relating these aims and objectives to philosophies and strategies, it was sometimes found useful to distinguish between three sub-categories of company.

- (i) Oil majors
- (ii) Conglomerates
- (iii) Companies with the bulk of their activities in shipping or marine related activities

Where appropriate, attention will be drawn to distinctions between these three in later sections.

No particularly clear picture emerged with regard to objectives from the discussions held. In three cases the main reason for the lack of clarity was principally attributable to the fact that discussions were held with senior staff of subsidiary shipping companies, rather than with Head Office staff. Even if clear objectives did exist centrally, they certainly were not communicated to subsidiaries. In the remaining companies a variety of ideas were put forward, sometimes interrelated, sometimes not. In the main, objectives could be related to the following general areas.

- (i) share price and related issues
- (ii) profitability and return on capital
- (iii) dividends
- (iv) other areas

These are dealt with in more detail below. Overall, the objectives to do with profitability, particularly return on capital, appeared to be the most important, with share price concerns, as opposed to share price maximisation, being an important feature in a number of cases. In some cases growth was identified as an important objective. Some implicit views on dividend policy were obtained.

1.2 Share Price Maximisation/Public Company Responsibilities

Probably the first clear factor that emerged was that few companies in any of the sub-categories saw maximisation of share price per se as either an appropriate overall objective or an operational one. In response to a question on the extent to which share price maximisation was a specific objective, answers tended to be anything but specific. Only five companies emphasised the importance of share price maximisation. Another three companies, while accepting that share price maximisation might be an appropriate theoretical objective, did not see it as an operational objective. Eight companies attached little importance to it, and it was not a significant consideration in the decision process for these companies. (Two of these eight companies were in fact large private companies, which behaved in most respects like a large public company, but which clearly did not regard share price maximisation as appropriate) In three cases no clear picture was obtained, since interviews took place in subsidiary shipping companies. In at least one of these cases some share price "concerns" existed, although their exact nature was not communicated to the subsidiary, as is evidenced by the following observation.

"There is obviously known to be always great concern as to the level of the share price, and I'm sure it is implicit that there is an attempt to maximise it, but which comes first I'm not sure."

As has already been pointed out, only five of the companies included in this category said that they were concerned with share price per se. In some of these cases decisions made and subsequent discussions held were supportive of this claim, but more typically there were other factors which might have influenced these decisions, rather than share price alone. Separation of such influences is almost impossible. For example, in one of the five companies the shipping activities were disposed of. This disposal was explained partly on the grounds of share price considerations (i.e. the volatility of shipping earnings when compared with earnings elsewhere in the group), and partly on the grounds of incompatibility of interest (parent company management simply did not understand, and therefore were not comfortable with, the shipping industry). Which of these two aspects was the more crucial was unclear. Indeed the decision appears to be one reached by weighing, intuitively, several criteria.

In two of the remaining four cases similar arguments were put forward, and spin-offs resulted. Again the arguments with regard to share price and compatibility were put forward. However, in both cases, while spin-offs resulted, there is little doubt that the mechanics of the capital budgeting process were not consistent with an overall approach aimed at share price maximisation. In each of these two

cases investment decisions were initiated in the subsidiary shipping companies, and no formal targets (e.g. ROI or similar) were set by the parent. In the fourth case referred to above, share price concerns were attributable to the fact that the company was seen as a growth company, and expansion was frequently financed using company paper. A good share price was seen as making such issues much easier and more effective. In the fifth company which indicated that share price maximisation was an objective, subsequent discussion made it clear that it was not an operational objective, since all decisions were viewed from two standpoints, namely the impact on earnings, and the impact on cash flow.

It should be recognised that none of the above comments are intended to imply that other companies in the study ignored share price, but that its relevance was variable, and that it was not seen as a particularly useful objective in an operational sense. It has already been pointed out that three other companies did express some concern with share price, and many executives could see its virtue as a theoretical goal. However, in practice goals were generally related to earnings levels or return on shareholders equity, since such goals were more tangible, and could be made operational. Doubts were expressed about the stock markets and the way in which company performance would be translated into an effect on share price. Six companies (three of the five already mentioned, plus three more) therefore felt that the best way of dealing with the problem was to concentrate on business which gave the prospect of an appropriate rate of return, or level of earnings. For example:

"We have a view that we would like to be earning profits at a level which would therefore result in the share price being at a level which, if we wish to at a particular moment in time, would enable us to go to the market to raise more equity."

Concentration on profitability, even if not leading to share price maximisation, appears to be considered likely to lead to reasonable share prices.

Another factor of potential importance in the share price "concern", was dividend policy. Dividend policy was not always, or even usually, made explicit. However, in the cases studied, there were very few instances in which dividends per share were reduced, even in times of volatile or declining earnings, suggesting implicit concerns. These are dealt with in more detail in section 1.4.

Other factors, such as capital structure, quality of earnings, diversification, etc., were also seen as having some implicit bearing on share price. In certain of the larger companies sheer size tended to prevent anything other than simply a general concern about share price. In the majority of

such companies investment initiatives came from the subsidiary companies or from divisions. In most cases these decisions had to be approved by the main Board. However, in many such cases this appeared to be in the form of rubber stamping. A number of examples were found where senior staff of subsidiary shipping companies were unaware of any specific objectives or strategies being held or implemented by parent company management, which suggests no overriding concerns with share price. Even had such concerns existed, non communication would have made achievement of such an objective difficult.

A small number of companies in the survey had considerable growth aspirations, which in turn often meant that their stocks were seen as "growth stocks". These companies generally spent a considerable time on cultivating relationships with the financial markets and with existing shareholders. This is not quite the same as attempting to maximise share price, although some connection clearly exists. In general it may be said that concern with share price appeared to vary somewhat with the potential need for further equity issues. While some of the concerns in this area were of the traditional type, there were a number of cases where a good share price was seen as a way of preserving flexibility, since company shares could then be used very effectively in takeover situations. In passing, it should be noted that a good share price was also seen as a defence against takeovers.

A further related point which arose was that in a small number of cases reference was made to the nature of the ownership of shares in the company. Several instances were cited where shares were substantially owned by institutions. In such cases attention was frequently paid to the maintenance of good shareholder relations, with comments being made such as:

"They are very concerned with their ability to market equity in the US market, and they spend a lot of time on shareholders relations, which, in our case, ... involves a lot of pension funds, banks, etc. (We're very much institutionally owned.) They have a lot of analysts meetings, that type of thing. I'm not saying they're concerned crassly with share price, but they're concerned with the relations with the equity market."

Unfortunately, the questioning did not systematically address the issue of the ownership of shares, so it is difficult to ascertain the extent to which institutional ownership existed in the companies included in the study. However, where institutional ownership was identified in the discussions, the maintenance of good shareholder and financial market relationships was seen as important. This is not necessarily the same as concern with share price per se. Indeed, the cultivation of good shareholder relationships was seen in a small number of cases as implicitly substituting for share price concerns, since it

facilitated far better communication between the owners and the company.

Another aspect of the nature of share ownership concerns those companies which, even though publicly traded, were so closely held that share price was not seen as very important. In one such case the idea of share price maximisation had *"zero bearing on decisions"*. The reasons for this appeared to relate to two factors:

- (i) very little trading in shares occurred, making share price a less effective indicator than in more widely held companies,
- (ii) probably more importantly, the fact that owners were, or could be, as involved in the management of the business as they wished to be, and could effectively control its future direction as managers.

Under such circumstances share price concerns have little relevance. It needs to be recognised, however, at the opposite end of the spectrum, that large and diverse public ownership did not necessarily lead to great concern about share price. Concerns existed, but these were seldom of overriding importance. In practice, these concerns translated into certain philosophies and strategies, which are dealt with later.

Before leaving this section it is worth noting that the cultivation of the financial markets or institutional investors was a feature which arose in a number of companies, irrespective of the nature of the share ownership. Indeed, this was particularly important for companies with substantial interests in shipping, since further finance was likely to come from this area. In most cases however, the process was very broadly based, mainly consisting of the maintenance of good contacts and the holding of fairly regular meetings with bankers and brokers.

1.3 Objectives to do with Profitability

Some kind of profitability objectives appeared to be implicit (if not explicit) in almost all of the companies in this category, with particular emphasis being placed on quality of earnings, a point which will be returned to in the section on philosophies and strategies. As with the questions on share price maximisation, however, the precise nature and importance of the profitability objectives was unclear. In ten cases discussions led to the identification of some kind of return on capital objective, while in the remaining cases concerns were much more general. In two cases the discussions did not reveal very

much about corporate wide profitability objectives. One of these companies was very closely held, while in the other the discussions took place within the shipping subsidiary.

Attitudes towards return on capital also varied considerably. Seven of the ten companies which had identified return on capital objectives appeared to set formal ROC targets, and these were given high priority. The first such company regarded return on shareholders investment as the highest priority, and looked for a return of the order of about 25% per annum. A second company set a target return on ordinary shareholders funds, which was then converted into a profit target. In fact these profit targets were *"averages"*, because of the cyclical nature of shipping, but they should always be within certain limits of the target. This company had no set dividend policy, and regarded return on ordinary shareholders funds as the *"best objective"*. A third company adopted a similar view, setting return on capital targets, yet allowing some averaging. Interestingly, this company pointed out that targets would not change as conditions changed, reflecting the importance of the achievement of adequate returns, irrespective of industry conditions. Only one company set targets on a current cost basis, with a required ROC of 8% on a CCA basis. In one company financial targets were set by the subsidiary, so they could (and did) reflect prevailing market conditions in that industry. Nevertheless, these targets had to be approved by the parent, since a certain range of return on investment was considered minimally acceptable. In two companies, while it was made clear that formal profit and growth objectives were set, no details of the precise targets set were obtained.

Three companies appeared to have implicit ideas on return on capital, but had reservations about the advantages of following through their ideas into the setting of formal targets. In one of these cases the main reservations related to the behavioural problems associated with the setting of specific target figures for the next four or five years, since it was perceived that budgets and forecasts would be prepared which fitted with the target set, however unrealistic that target might be. In the second case the company simply aimed for the highest profits it could, rather than set precise targets. This reflected current difficulties in the industry, and the problems of forecasting associated with them. Nevertheless, a reasonable return on investment was looked for. In the third case no mandated levels of profitability were set out, but it was clear that each profit centre was to remain profitable.

In the remaining companies concerns with profitability were much more general in nature, and less emphasis was placed on target setting and return on capital per se. This should not be taken to imply less concern with profitability as an objective, but rather with the precise quantification of

earnings objectives or targets. In most of these companies subsequent discussions indicated that earnings quality was fairly high, and rapid growth had occurred in at least two companies, funded in large measure by retentions. Two of the companies which did not set targets were engaged predominantly in shipping activities, and the current uncertainties of that particular market appeared to be a significant factor. In one of these companies profitability objectives translated into a short-term objective of not actually losing money. One company placed great emphasis on the profile of profits, and looked for profits on new projects *"from day 1"*. In one company, part of the strategic plan involved the shipping subsidiary being given the remit of turning losses into profits so that it could be sold.

Overall, there is little doubt that profitability objectives were of considerable importance, whether explicit or implicit. Particularly interesting was the emphasis on return on capital referred to earlier. This was identified as important in virtually all of the diversified conglomerates. Indeed, reference to the later section on philosophies and strategies will make it clear that high quality earnings, which by definition will provide both regular and reasonable returns on capital, are an important part of corporate objectives for category 1 companies. In general, although some exceptions existed, return on capital, at least in terms of formalised targets, appeared to be less important in those companies in which most activities were shipping oriented. This is probably due to the volatility of the industry at the time of the study, and the difficulties of achieving reasonable returns, especially on a regular basis.

1.4 Dividends

Very few cases were found in which dividends were perceived to be a significant objective or decision variable, with only six companies making positive statements concerning dividend policy. Of these two had a policy of paying low or no dividends, while the other four had policies covering the payment of dividends. In two of these the policies were substantially influenced by the structure of the group and the nature of the ownership. In a third case dividends were viewed as a kind of economic rent. The fourth company discussed its approach as follows:

"We do have a dividend policy, ... but of course, at the end of the day the Board decides on the dividend it believes it can maintain in the light of the circumstances at the time, and what they foresee."

A detailed analysis of actual dividends and earnings for category 1 companies in fact suggests a more positive approach to dividend policy than might be obtained from the discussions held. Figures for earnings per share and dividends per share are given in Table 5 for 14 of the category 1 companies. Twenty four cases of reductions in earnings can be seen. Compared with this only two instances of a reduction in dividends occurred. Such a set of results would certainly suggest that category 1 companies do not wish to pay dividends at a rate which cannot be at least maintained in the future.

Earnings per share/ Dividends per share										
Company /currency	1978		1979		1980		1981		1982	
	EPS	DPS	EPS	DPS	EPS	DPS	EPS	DPS	EPS	DPS
Alcoa \$	4.45	.95	7.15	1.30	<u>6.54</u>	1.60	<u>3.97</u>	1.80	.11	1.65
Exxon \$	3.10	1.65	4.87	1.95	6.15	2.70	<u>5.58</u>	3.00	<u>4.82</u>	3.00
Moore McCormack \$	3.90	.65	4.73	.727	5.50	.827	6.01	.933	<u>.78</u>	1.02
Ogden \$	20.52	1.03	22.64	1.27	24.82	1.40	27.01	1.70	28.31	1.80
OSG \$	2.11	.169	2.56	.220	3.06	.305	3.43	.416	2.35	.50
Sea Containers \$	3.48	.36	3.68	.42	4.62	.42	<u>4.38</u>	.42	<u>3.83</u>	.42
Reynolds \$	4.29	1.79	5.05	1.95	6.12	2.18	7.03	2.50	7.82	2.85
Texaco \$	3.14	2.0	6.48	2.12	9.79	2.45	<u>8.75</u>	2.80	<u>4.92</u>	3.00
Booker McConnell £	13.7	2.0	15.5	3.1	<u>9.5</u>	3.1	10.2	3.5	<u>10.0</u>	3.8
Burmah £	4.71	-	29.92	6.5	<u>19.51</u>	6.5	23.75	8.5	<u>18.3</u>	9.0
Ocean £	<u>(2.9)</u>	8.3	13.9	8.9	<u>23.5</u>	9.0	<u>13.8</u>	9.0	<u>(0.2)</u>	6.7
P & O £ (dividends in total)	<u>5.2</u>	9.2	17.6	9.9	20.9	11.3	21.0	14.2	<u>14.0</u>	14.2
Powell Duffryn £	<u>41.8</u>	10.0	<u>29.9</u>	11.0	39.9	13.25	<u>36.8</u>	14.25	<u>31.8</u>	14.25
Trafalgar House £	16.1	3.84	<u>11.4</u>	4.61	12.7	5.35	20.4	6.2	20.6	7.20

Table 5 Relationship between earnings and dividends - category 1 companies

Dividends could thus be perceived as being a significant constraint, rather than as an objective. Such a view is re-inforced by the fact that the proportion of earnings paid out as dividends is generally low, with relatively few instances being found of dividend payout ratios in excess of 50%, and 11 of the 14 companies having average payout ratios of 35% or less. Ratios of this order are relatively conservative, and are unlikely to pose problems of maintenance for most companies. This may explain the apparent lack of concern in the discussions with dividend policy.

1.5 Other Objectives

The only other objective specified by more than two companies was one related to growth. Six of the companies explicitly stated that they had some kind of growth objective, although often the extent of desired growth was unclear. For example:

"I can't quote you a percentage number and say, we want shareholders funds to grow by 20% or something ... it would be a nonsensical objective. But yes, we want shareholders funds to grow. Obviously as a general objective, we have an objective to make a given return on shareholders funds, part of that will be retained in the business to make it grow."

The figures set out in the previous section on dividends also indicate that considerable retentions are to be found in category 1 companies. Such figures will typically lead to substantial growth over time, suggesting the possibility of implicit growth objectives in many of the remaining companies. This is reinforced by the fact that few category 1 companies had any significant limitations with regard to raising funds in the financial markets.

The only other objectives specifically identified related to market shares (two companies in the liner trades), and survival.

1.6 Conclusion on Objectives

In discussions on objectives clear distinctions were sometimes drawn between long term objectives of a somewhat abstract nature, and short term objectives required by necessity. This distinction was most frequently drawn by companies with considerable interests in shipping. Well diversified companies, or those in stable industries, seldom made such a distinction. Clearly the impact of the current recession in shipping was having an effect. This section needs to be considered further in the light of the philosophies and strategies used to provide a framework for decisions, since volatile markets such as shipping appear to require (or cause) a different approach. In such markets, while broad objectives may be set, their operational value is almost nil. In practice it would appear that the more volatile the industry the less likely it is that management will devote much time to objectives.

Indeed, in considering both published material and the discussions on objectives, it became clear that there were very few cases where objectives were formally thought through, let alone written down. Managers seemed to act with some sort of general view along the lines that they would do the best they could in the way of business. Goals related to return on investment or earnings levels are

practical ways of implementing such goals. General goals or objectives of this type are extremely environment oriented, and permit a very flexible approach, including the recognition of survival as an appropriate goal under certain conditions.

On the basis of the above findings it seems clear that share price maximisation cannot be viewed as providing a clear or workable objective for management. Concern with share price is real, but in this study there were few examples of share price considerations seriously affecting a decision. The figures on dividend policy suggest that dividends are seen as either one of several objectives, or as a market constraint. Differentiating long and short run objectives poses problems, as does volatility of earnings in shipping related companies. Probably most significant is the fact that management seems able to make decisions without any clearly defined overall objective, but with only some vague earnings oriented implicit objective in the background. Having said this, the next section on philosophies and strategies should make it clear that implicit objectives may be no less influential than explicit objectives.

In passing, it is perhaps worth referring to the work of Quinn (1977). He has provided a logical set of reasons why management does not set clear, explicit, formalised objectives, or follow traditional corporate planning theory particularly closely. The above comments go some way to explaining the non-identification and quantification of goals or objectives in the context of the shipping industry. This thesis concentrates more on financial aspects of decision making than on behavioural aspects, so many of the arguments proposed by Quinn cannot be tested formally. However, many of the arguments he puts forward appear extremely plausible, and further empirical testing seems likely to support many of his observations, at least as far as the shipping industry is concerned. In the context of this study, there is no doubt that Quinn is right about management not announcing goals. The main reasons appear to be related to the volatility of the shipping industry, forecasting difficulties, and confidentiality with regard to decisions.

One final point needs to be made concerning objectives, although it was a point discussed in only a small number of interviews. The importance of the personalities of chief executives and other top managers, and particularly of changes therein, was seen as being very significant in at least three companies. Again, too much should not be made of this, but in the few cases where such changes occurred, some changes in objectives and philosophy certainly occurred.

2. Philosophies and Strategies

2.1 Introduction and overall findings

In the discussion of underlying philosophies and strategies adopted by category 1 companies, a number of ideas stood out fairly clearly.

(i) Category 1 companies were extremely concerned about the quality of their earnings, and most felt that, as public companies, they should only engage in business with high quality earnings.

(ii) Concern with quality of earnings had led to clear views emerging on the areas of business within which category 1 companies should operate, and on diversification. In most cases considerable emphasis was placed on areas of business which could be protected in some way, and on a positive approach to diversification. Some differences in the approach to diversification were found, in terms of the range and type of activities undertaken.

(iii) Most acquisitions were intended to be long term, rather than speculative, with very little trade in ships (or other fixed assets) occurring. Apart from the bulk trades (and few public companies were involved substantially in this sector) most investments were made in fleet terms.

(v) Considerable emphasis was placed on the desire to preserve flexibility of action, and the ability to respond to opportunities and threats as they arose. More detailed analysis of this suggested four areas of flexibility:

- (a) strategic positioning
- (b) market flexibility
- (c) operational flexibility
- (d) financial strength and flexibility

These ideas are particularly interesting, and suggest that decision makers in category 1 companies are very concerned to keep their options open, and to be able to absorb shocks and respond to opportunities with relative ease, rather than to be unduly concerned with optimising policies in the normal sense.

In addition a number of other ideas were raised by a smaller number of companies covering such things as the preservation of market shares, being the lowest cost supplier etc .

2.2 Philosophies with regard to earnings

As was pointed out in Chapter 7 the pilot study had suggested that greater emphasis was placed on earnings and return on shareholders capital than on ideas of share price maximisation. The comments of the last section indicate that such a view holds good for the majority of companies in this survey. The pilot study further suggested that companies in this category were generally very concerned about the quality or regularity of their earnings. This type of thinking was also found to be common in the further studies made.

In a number of cases this philosophy was spelt out in some detail, often to explain differences between public and private companies, or to explain the rationale behind a particular choice. In particular, reference was made to profits on the purchase and sale of ships, which were becoming an increasing part of private company profits. Very few public companies saw this as a legitimate course of action for them. In general, public companies had a different philosophy, and were mainly interested in a regular stream of earnings. This attitude can be seen in the following two quotations, both from UK companies.

"... it's a difference in philosophy, a public company cannot take that attitude. We are interested in earnings, a regular stream of earnings, and, if you take it to its absolute maximum limit, you could argue that a public company should not be in tramp shipping at all, because it is a highly volatile, highly speculative market. Though this is probably taking it to extremes."

"I think that the private companies in this country will tend to be a little bit more entrepreneurial in spirit than the public companies, because they do not have to answer to the shareholders."

In considering the philosophies underlying certain actions, it is necessary to differentiate conglomerates from companies mainly involved in shipping, or at least in marine related trades. While virtually all category 1 companies were very concerned with the quality of their earnings, those which were predominantly shipping companies, or which had substantial interests in shipping, were clearly not as capable of achieving such high quality earnings as a well diversified conglomerate. Having said this, most public companies were still concerned to maintain as high a quality of earnings within shipping as was possible. Nevertheless, the differences between shipping and other activities found within the conglomerates did sometimes lead to tensions, and certain differences in philosophy were found between shipping people and others. For example, one senior manager in a shipping subsidiary expressed his frustrations as follows:

"That is one of the problems you find in the American business. Where conglomerates own shipping companies they could not look on the capital assets as something that had to be traded just as much as the charters had to be traded. We had to have the ability to dispose of vessels and to buy vessels as quickly and as easily as we could do a charter, and American business is not structured that way ... I sometimes think that other corporate reasons than the pure shipping reasons enter into those decisions, and they are not always right, and sometimes given undue influence. You've got a publicly traded US company (which is) depending on a constantly rising level of earnings. They do not want to dispose of a vessel and take a book write-off. Nor do they want to dispose of a vessel at an enormously high profit in a period, and in the next period not be able to match it, so disposition of assets had been a constant problem."

These tensions have been apparent in a number of companies in recent years, with a considerable impact being apparent with regard to the areas of business in which companies operate, and the extent to which diversification takes place. These are dealt with in the next section.

2.3 Areas of Business/Approaches to Diversification

Concern with regular earnings has in turn led to fairly specific views on the areas and types of business in which a public company should be involved (or perhaps not involved). These views can be subdivided to cover three distinct, but related facets.

- (i) the relative importance of shipping as part of the activities of category 1 companies;
- (ii) the approach to diversification;
- (iii) the type of activities within shipping, which are likely to be concentrated on by category 1 companies.

Importance of Shipping Activities

It is interesting to note that the concern with regular earnings appears to have resulted in a considerable reduction in the proportion of activities of many companies, which could strictly be called shipping activities. For example, the proportion of total assets employed taken up by shipping in P & O declined from 80-90% in the early 1970's, to about 55% in early 1983. In most other companies the balance between shipping and other activities has also changed in a similar direction. In one major UK group the shipping activities were seen as a "weakness" because of the volatility of earnings in the area. In another the shipping subsidiary was disposed of subsequent to the interview held. In two instances in the USA whole shipping subsidiaries had been sold off in recent years. Moore McCormack Resources disposed of Moore McCormack Lines to Unites States Lines, while Holiday Inn disposed of Delta Lines.

An interesting feature found in the American industry, related fairly closely to the above points, is the importance of "spin-offs" in recent years. Where these have occurred parent companies have effectively separated their shipping interests from the rest of their activities, usually by issuing new shares in the shipping company in proportion to existing shareholdings. Such spin-offs have occurred in at least four cases (Reynolds/Sealand, GATX/MTL, Ogden/Ogden Marine, Natomas/APL). Interviews were held with companies which were party to three of these. An analysis of these discussions, together with press reports and related information, suggests that the reasons for the spin-offs were broadly related to the following areas:

- (i) Quality of earnings
- (ii) Compatability of business interests
- (iii) The capital intensity of the shipping industry, and its effect on overall gearing/leverage

Given the increased volatility and uncertainty of the shipping industry, it is not surprising that the quality of earnings from shipping were seen as being lower than those from other existing activities. In one of the above cases the lower quality of shipping earnings was seen to have a significant effect on P/E ratios.

"They are concerned with their share price. They have been trying to get the quality of their share price up. The shipping business has traditionally been at five or six to one. A company like ... would like to sell at nine or ten to one. The quality of earnings is something they would always like to convince people of, but you can never convince people of the quality of shipping earnings because they may turn around next year."

In a second case the returns from shipping were compared unfavourably with returns from the base business of the group, which were of a very high quality. Clearly in both cases the quality of earnings within shipping was not high enough to justify maintenance of the shipping activities as part of a public quoted conglomerate. This is consistent with the earlier comments on the reductions in the proportion of shipping activities now found in most category 1 companies.

Compatability appears to relate to the idea that a corporate group should comprise areas of business which provide some kind of synergy, and/or where the fundamental approach to business is broadly similar. Areas of business which are volatile and difficult to predict are thus likely to be viewed as being incompatible with more stable areas of business. In one of the spin-offs which occurred, attention was drawn to the fundamental differences between the acquisition of vessels for use in the volatile bulk markets, and the acquisition of fixed assets for use in other more predictable

industries. In the latter industries a fairly clear use could be foreseen for the assets acquired. This was not the case for the acquisition of ships, as can be seen from the following observation.

"I know of no vessel where we had the charter before we built the vessel. I know the parent company would love that, but it just does not work that way."
(Emphasis added)

Part of the rationale for a second spin-off followed similar lines:

"I think the spin-off is primarily non-compatibility with the general portfolio of the parent. This is an assumption, but I think it was considered compatible. However as they have changed some of their overall comprehensive objectives, transportation fits less well, plus the fact that transportation goes through cycles and these provide shocks for people unfamiliar with the transportation business."

The sheer size of investments needed to maintain an interest in shipping also posed problems, since inevitably such investments have high opportunity costs, and also have potentially serious implications for overall gearing levels.

The weighting given to each of the above areas is unclear, and actual decisions appear to reflect a combination of them. A useful illustration is provided by Schreffler (1984), who conducted an interview with senior executives of Ogden Corporation on the subject of the Ogden/OMI spin-off. In this interview the chief reasons for the spin-off of OMI were identified as follows:

- (i) the higher capital demands of the shipping industry, and the lower overall return on equity found in the ocean shipping business. It was felt that this might impair the ability of the parent to support fully its other businesses. The spin-off would thus provide greater flexibility;
- (ii) the volatility and "risk taking" approach associated with shipping, coupled with the fact that the shipping activities were not seen as likely to be profitable for several years;
- (iii) tax benefits associated with shipping activities could now be obtained from other alternatives, which were also likely to give more regular earnings;
- (iv) the spin-off was consistent with a decision to implement a long range strategy to emphasise service activities which were not debt intensive, capital intensive, or cyclical. The capital needed to maintain or expand the shipping activities would conflict with this;
- (v) the spin-off improved the long term debt position and the working capital position.

Precisely how much importance was attached to each of these is unclear. Nevertheless, this interview is useful in identifying the range of factors deemed important.

Importance of diversification

Concern with regularity of earnings has caused most public companies to diversify. Of the 19

companies in the sample two were oil majors, twelve were companies or conglomerates with three or more substantial areas of activity (or markets), and five were companies with limited diversification outside of shipping. (It is interesting to note that since the interviews, one of these five companies (OCL) has been taken over (by P & O), while another (Ocean) has changed its attitude towards shipping, and appears to be embarking on a significant diversification strategy.) Three of the last five companies had well diversified areas of interest within shipping, with only two companies being largely restricted to a single area of activity (the liner trades). In almost all the cases where diversification had occurred, the diversification process, at least in recent years, has been a fairly positive one, with the aim of reducing exposure to one particular sector, and thus reducing the volatility of earnings. For example, one such company discussed its approach as follows:

'There were deliberate diversifications which have taken place, really in the last eight years, the obvious one is ... , I suppose ... Now the original rationale for ... was that we had large quantities of tax allowances, and we wanted UK profits, and we wanted profits that were counter-cyclical to shipping profits ... It was a positive decision to search out a company like this.'

A similar approach was found in the case of R.J. Reynolds Inc., which was, in the early 1970's, predominantly a tobacco company. An orderly diversification plan was devised which put it into everything from fresh bananas to vodka, and which boosted company sales to \$13.6 billion in 1982 and earnings to a record \$870M. The impetus for the diversification programme was provided by consideration of the company future under the worst possible scenario for the tobacco industry. A series of carefully planned acquisitions followed, with the result that by 1983 tobacco accounted for less than 50% of revenues. In 1973 the figure had been in excess of 70%. (Source Los Angeles Times, March 6th 1983).

The major diversification decisions were sometimes the result of specific ad hoc investigations, and sometimes the result of a regular review of the overall company profile. However, in practice, the diversification process appeared to go only so far. In fact very few companies in this category had more than five major areas of business, although within these areas further diversification was frequently found. Four companies made it clear that their activities would be confined to areas which were marine or transportation related. Two companies expressed views which implied that, having gone through the diversification process and found it uncomfortable and not particularly effective, they were now concentrating more on their basic areas of business.

Interestingly, differences in attitudes appeared between UK and USA companies. Links between

various activities seemed generally closer in the USA than the UK. In the majority of cases in the UK the various areas of business were often unrelated, and divisions/subsidiaries were run in an autonomous way, with very broad central control. In the USA the overall focus of corporate activities was generally clearer, and similarities between divisions/subsidiaries could be recognised, and synergies sought. For example, R.J. Reynolds Industries Inc., has, to a great extent, realized the goal it set nearly a decade ago, of establishing itself as a premier, worldwide consumer products company. Its strategies have been geared to achieving this objective, and its foods and beverages interests have been expanded considerably. Its other main interests at the time of the interviews were tobacco, transportation and energy. The relationship between tobacco and food and beverages is clear, and the transportation subsidiary, Sea-land, has been spun off, leaving a fairly cohesive unit behind. J.P. Sticht, Reynolds head, has stated that he has a vision of R.J. Reynolds products being in every grocery basket with items ranging from cigarettes to canned vegetables, a frozen food entree to a bottle of California wine. However, Sticht has also said that although a few other acquisitions could not be ruled out, it was now time to consolidate the company's activities.

Moore McCormack Resources is another example of a company with considerable breadth of interests, yet which has a clear view of its interests.

"Moore McCormack Resources is a natural resources company: exploration, production and transportation. Our primary markets are construction, energy, and the steel industry." (1982 Annual Report)

Clearly companies exist in the UK with similar orientations, e.g. The Burmah Oil Plc., with interests in five areas, namely exploration and production of oil and gas, lubricants and fuels, retailing (the Halfords Shops), shipping (liquefied natural gas, tankers and an oil transshipment terminal), and speciality chemicals. However, in other companies the links, while sometimes close, are not always quite so readily obvious. For example, Powell Duffryn are involved in engineering, shipping, bulk liquid storage, fuel distribution, and construction services. At the time of the interview Booker McConnell had eight main operating businesses (a rather larger number than most) covering engineering; food distribution; health products trading; spirits, liquors and international trading; shipping; agriculture; authors; and service companies. Interestingly, by 1984 the shipping interests had been sold off, and the Annual Report indicated that the spread of activities had been reduced, with concentration now being on agribusiness, health products, and food distribution. This was the result of a clear development strategy.

As far as the conglomerates are concerned, it is probably a mistake to make too much of this distinction, which is fairly marginal. However, where substantial differences between the UK and USA now arise is with regard to the large public shipping companies. In the UK there are very few large public companies where the majority of funds are tied up in ships or marine related activities, P & O and Ocean, being the only two at present. Even in these two companies clear evidence exists of positive moves towards greater diversification. In the USA the effect of shipping company subsidiaries being sold or spun off is to provide a category of large public shipping companies that has not existed for some time. Given that concern with the quality of earnings cannot realistically be as great for a shipping company as for a conglomerate, the future actions of these companies is potentially very interesting.

At present it is too early to judge either market reaction to these "new" companies, or whether a change in status will result in a change in philosophy. Initial impressions in discussions suggest that the spin-offs are not envisaged to have any significant effect on the type of business carried on, but that shareholder concerns, particularly debt/equity relationships, are likely to become more important. The long term result is far from clear, and the area provides rich material for continuing research.

Before leaving this subject it is perhaps worth noting that diversification, while important, represents thinking at a strategic level. Once a reasonable strategic mix of markets has been identified it was common to find that the emphasis of the investment search changed, typically to a much more detailed consideration of:

- (i) the areas of concentration
- (ii) replacement and upgrading of existing assets

As far as the areas of concentration are concerned, it is interesting to note that almost all companies considered that they had a clear view of the business/es they were currently in. Many new ventures "grew out" of existing areas, or were extensions of existing interests, perhaps re-inforcing the earlier comments about limits of diversification.

Areas of Activity within shipping

In discussions it became apparent that the pre-occupation with regular earnings referred to earlier had a very strong effect on the type of business within which the companies typically operated. In some cases this resulted in a more negative approach to the area. In other words, were there areas the company did not want to be in? When this question was applied to shipping some fairly clear

answers emerged, although the answers were not the same for all companies. In general, tankers and dry bulk carriers, particularly when operating on the spot market, were not favoured. Cruise ships, liner trades, and high technology ships e.g. LNG/LPG carriers, were. The emphasis in this category of company was clearly on the high technology, high quality end of the market, which was less likely to be subjected to the same degree of market competition, at least in the short term, as the less advanced areas of shipping. Costs of entry into such areas are extremely high, the operation of such ships often requires a sophisticated corporate infrastructure, and fairly long commitments are needed to obtain adequate returns on investment. Most of the larger public companies involved in the liner trade were also well established members of consortia and conferences, which typically used high technology ships, frequently, though not necessarily, dedicated to a specific trade. One company summarised its approach to shipping as follows:

"The areas of shipping where a British public company can operate successfully are becoming fewer, ... and, basically we have been getting out of low technology and tramping, things which lack some special characteristic which might enable us to carve a particular niche ... We have just sold some reefer ships because there is no particular skill in operating a reefer ship ... the market is overtonnaged at the moment, and there is no particular characteristic that we can bring to it. So we are not making very much money out of it. So we are selling our (reefer) ships."

This same company was nonetheless investing substantial sums of money in other areas of shipping, but in areas with significant barriers to entry.

This is not to say that there are not public companies with shipping interests mainly in the bulk trades. In this study eight of the nineteen companies fell into this category. However, in five of these cases clear reasons for this choice could be identified by reference to the other activities of the groups. The shipping subsidiaries and divisions of companies like Exxon, Texaco and Alcoa had significant interests in the transportation of their own parent company's supplies and products. Even so, the majority of oil majors were actively disinvesting in this area at the time of the interviews. Stephenson Clarke, the shipping subsidiary of Powell Duffryn, operate a fleet of ships in the European short sea, bulk trades, and have filled a kind of market niche. Clear links exist with other areas of the group's activities. Their tanker trade has been phased out, and they are now involved in the disposal of waste at sea. Moore McCormack has bulk shipping interests which are consistent with and supportive of their other activities. The remaining three companies in this category with considerable interests in bulk shipping were Marine Transport Lines (MTL), Ogden, and Overseas Shipholders Group (OSG). At the time of the interview Ogden had a shipping subsidiary. As has already been pointed out, this subsidiary

has been spun-off, leaving a shipping company with considerable bulk interests, covering both dry bulk and tankers, together with product tankers, LPG ships, Car carriers and Ro-Ro's. MTL was in a similar position, having been spun-off from GATX, and having considerable interests in dry bulk vessels and tankers, together with product tankers, chemical tankers, molten sulphur tankers and gas carriers. OSG has substantial bulk interests, together with product carriers and combination carriers (e.g. car/bulk). Clearly these last three companies have other shipping interests over and above their bulk interests, but they are nonetheless far more exposed to the vagaries of that particular market than any other category 1 company. It is probably fair to say that all three are experiencing considerable change in the markets they have traditionally dealt in. The effect on market perceptions of these companies is not yet clear, nor is the long term effect on their attitudes and strategies.

2.4 Types of Asset and Approach to Acquisition

The vast majority of investment decisions made by category 1 companies were long term decisions, again reflecting concerns with regularity of earnings. In no cases were investments made on a speculative basis (i.e. where no clear long term use for the asset has been identified, but profits may be made by reselling the asset in the short or medium term). This is not to say that vessels were not sold at opportune moments. Such sales occur, probably more than they used to, but generally vessels were acquired with the intention of holding them for in excess of ten years, and sometimes for as long as 20 years.

It is also interesting to note that in a surprisingly large number of cases investment decisions were made on the basis of the acquisition of whole fleets or classes of ships, dealing with a specific trade, or indeed, on the basis of the acquisition of another shipowning company. For example, Cunard entered the fruit carrying market by the acquisition of ten fruit carriers from Maritime Fruit Carriers. The company saw an opportunity to buy itself into a market with potential, at a low cost. The decision was clearly a strategic one, with the fleet being the objective. It is unlikely that the company would have been interested in the acquisition of a smaller number of ships, since it would not then have been a sufficiently large force in that relatively specialised market. Clearly the rationale for such a decision is rather different to that for a single project. In general, the large public companies were more likely to think in this way. The Finance Director of one such company pointed out that it would have great

difficulty in justifying one off investments.

Similar examples and attitudes can be found in the USA business. Sealand planned and implemented the introduction of a fleet of twelve new D9 containerhips. Mclean Industries did the same with a fleet of twelve new 4218 TEU containerhips for United States Line, their largest subsidiary. They also acquired Moore McCormack Lines, a company which owned 13 vessels and operated on different routes to those of US Lines, for \$60M.

In fact of the 19 companies included in this large public company category, nine companies very clearly made shipping investment decisions in fleet terms, six made decisions on an individual vessel basis, while the remainder said that it would depend upon circumstances. More importantly, in only two instances were vessel acquisition decisions made on an individual basis, where the vessels were intended for use in the liner trades. In one of these cases the acquisition was a replacement ship for a small liner service, where even a single additional vessel represented a significant factor in the trade. The second case represented a rare speculative venture into the liner trades, so it should not be viewed as typical. Similarly, while the oil majors clearly made decisions about individual ships to acquire (or to dispose of), the initial analysis and the broad decision was fleet oriented. For most other companies dry bulk carriers and tankers tended to be appraised on an individual basis, although overall fleet balance and other strategic factors were usually considered first.

In considering replacement of ships the emphasis was very much on cost reduction and improvements in efficiency. The analysis was usually (though not always) done on an incremental basis, with the emphasis being on fleet costs, with no really clear revenues, rather than an estimate of revenues or project surpluses.

The comments made above concerning regularity of earnings should not be seen as implying that public companies do not behave in an opportunistic fashion. A distinction needs to be drawn between speculation and opportunism. It has already been pointed out that no cases were found of category 1 companies making speculative investments, and few seemed prepared to consider such ventures. In the context of shipping this means that few companies would acquire a vessel unless they had a fairly clear idea as to its long term use. (This is of course rather different to having detailed charters in existence before building commences.) However, opportunities come along, and are responded to. Having said this, many opportunities which are taken appear to be closely related to existing activities of the business, re-inforcing (again) the earlier points on the limits of diversification. One company put it

this way.

"If we were presented with a gold mining company we would not buy it, because that is not our business, ... so what we have said is, we will be in certain activities and if we have an opportunity in those areas ... we will certainly look at it, and we might well buy it."

In practice it was often difficult to tell whether an acquisition or investment was opportunistic or the result of careful planning. In some cases, indeed, in most cases, the planning process and strategic thinking undertaken by a company frequently threw up the kind of areas of activity which should be considered, should an opportunity to do so actually arise. This will be considered in more detail in the next section. However, by way of example, it is clear that the purchase of Heublein by R.J. Reynolds falls into this type. J.P. Sticht, the Reynolds Head, in an interview with the Los Angeles Times, admitted that when he laid out his acquisition plan in 1973, although Heublein was on the list, he never expected to acquire them. They were too strong and doing very well. The list was regarded as a kind of wish list. However, in 1982, when General Cinema Corporation purchased about 18% of Heublein's stock, a move the company considered 'unfriendly', Heublein began looking for a white knight to rescue it from a possible unwanted acquisition. Reynolds duly obliged. Clearly other examples can be found. In general it seems likely that management frequently has a broadly based plan to try to expand in a certain direction. When an opportunity comes up it can then be taken quickly, in a way which is consistent with the long term strategy of the business. This is the subject of the next section.

2.5 Flexibility and Opportunism

Underlying the actions of most companies in this category was a desire to preserve flexibility of action, so as to be able to respond to opportunities and to threats as they arise. It is precisely because opportunities generally do arise in an unplanned way that such flexibility is sought. Flexibility of action is also extremely important under adverse conditions, and permits a variety of alternative responses to problem areas. Under present market conditions it may be that this second aspect is the more critical, but the philosophy appears general.

Preservation of flexibility and "strategic positioning" appear to be very closely related concepts, and the terms were sometimes used interchangeably. This was in some measure due to a certain amount of imprecision with regard to terminology. In fact a large measure of similarity was found in the approach and attitudes of companies in this category, and further analysis suggested that a

number of different aspects of positioning and/or flexibility could be identified, and these are dealt with below. Interestingly, published statements were found relating to some aspect of flexibility, positioning or opportunism, for ten of the category 1 companies. This is not to say that such statements were necessarily set out in the form of a carefully considered statement on flexibility. In many cases it was necessary to pull together various statements within, for example, the Annual Report or other published statements. However, when re-inforced by the interviews some extremely useful insights were obtained into the thought processes and philosophies underlying various decisions and actions. In the remaining nine companies in category 1, reference to some aspect of flexibility or positioning was made in the interviews. However, it needs to be recognised that the views on positioning and flexibility, and their subsequent analysis, tended to emerge and develop as interviews progressed. Later interviews were therefore more comprehensive in their coverage than earlier ones. Such an approach means that a precise quantitative analysis is not possible. Having said this, re-examination of earlier interviews identified various actions and attitudes which were consistent with those found in later interviews, although clearly the same level of confidence could not be attached to these results.

A number of the published statements available were fairly general, and represented little more than the statement of a general philosophy. This does not make them any less interesting, however, since they indicate a somewhat different approach to that normally assumed in most finance texts. By way of example extracts from Annual Reports for two companies are given below.

(i) Exxon (Source 1982 Annual Report)

"Our immediate goal is to put Exxon in the best possible position to respond to this unsettled short term environment ... while establishing a solid base from which to participate in the longer-range energy future. We have therefore been looking rigorously at the profitability of, and future prospects for, all Exxon's business lines, and at our strategies for achieving success in an intensely competitive market place."

"... in the following pages you will find examples of the steps which were taken in 1982 to size Exxon's operations to lower levels of demand in a world which uses energy more efficiently. This is not a one-time or one year process. In some areas of the business it began much earlier than 1982, and in most if not all areas of the business it will continue throughout 1983 and beyond. Other companies appear to be making their own adjustments to these changed conditions, thus intensifying the competitive environment, but we believe that the steps we are taking will position us well for the future. We expect to maintain a substantial resource base, trim and flexible operating capability and financial strength which will enable Exxon to adapt to the unexpected and the unforeseen, thereby continuing the productive growth and industry pacesetting that marked its first hundred years." (P2/3)(Emphasis added)

(ii) Ogden Corporation (Source 1982 Annual Report)

" ... we moved in 1982 into the position we think appropriate to the environment of the next twenty years. Since 1962, our most important task has been to constantly seek answers to two questions. What kind of world will we be living in, and what kind of company do we need to be? The answers to these questions are of little value without the flexibility to act from them. To predict the need without the ability to adapt is simply to foresee one's own end." (P8)

"... we will concentrate on cash flow, dividends, and preparation for the future. Our external and internal balance models are the measure of our corporate posture. Our external model shows approximately equal balance between Services, Transportation, and Products. That balance enables us to maintain the flexibility which is of primary importance." (P12)(Emphasis added)

Other companies were rather more specific, and identified particular areas of concern, or approaches to flexibility actually adopted. For example, Texaco, in its 1982 Annual Report, emphasised the steps which it had taken to improve its efficiency and competitive position. These steps included: the expansion of exploration; improved operating efficiencies; a flexible inventory management programme to take advantage of rapidly changing market condition; and a widening of its supply base. The company also emphasised the importance and size of its capital resources, and its ability to maintain liquidity through easy access to the financial markets. Overall the actions taken were seen as maintaining a strong operational and financial base during a period of recession, which would permit a rapid and effective response as conditions improved.

A second example was provided by Sea-Land, again in its 1982 Annual Report. In this report the company emphasised the importance it attached to being strategically positioned for the 1980's. It also detailed a number of factors which were considered important to the positioning process, in which they were favourably placed. These included: diversity of markets; a sophisticated and extensive information data base; fuel efficient ships of a size which gave greater flexibility in terms of trade route development; equipment ownership, giving greater flexibility to deploy equipment where deemed appropriate; efficient facilities strategically located worldwide; a superior sales force; multiple service areas; U.S. flag status, seen as giving greater flexibility to share in U.S. Government cargo and that related to bilateral agreements; freedom from subsidies and related conditions; and financial strength, through good cash flow and consistent earnings.

Statements such as these provide useful indicators of managerial attitudes and priorities. Both examples indicate multi-level concerns with flexibility. The extracts from the Texaco Annual Report indicated concerns at at least three levels. For example, concerns with strategic flexibility were dealt

with by such things as extra sources of supply and more exploration. Operational flexibility was sought through such things as flexible inventory management. Financial strength and flexibility was achieved through adequate capital resources and access to debt and capital markets.

The extracts from the Sealand Annual Report are particularly interesting, since they represent one of the most comprehensive statements found in the survey. As with Texaco, the concerns with flexibility and positioning were apparent at various levels. Concerns with strategic positioning were dealt with by diversity of markets. New markets could be entered into with relative ease, due to a superior sales force, a highly sophisticated database on international trade, vessels with considerable flexibility in terms of potential ports, and US flag status. Operational flexibility was sought through the use of vessels able to operate on a variety of routes and through a large number of ports, and equipment ownership. Underlying all of this was a strong financial position, with good cash flow. It is worth noting that at the time of the interview, and the above publication, Sealand was a subsidiary of Reynolds, and earlier comments on this particular company reinforce the depth of thinking on positioning within the group as a whole.

Other examples were found which indicated similar thinking to that identified above. For example, Powell Duffryn in its 1981 Annual Report, made clear its desire to maintain a balanced diversity of industrial activities, to increase its geographical spread, and to balance its fleet so as to ensure flexible and effective operations, while at the same time ensuring that adequate financial resources were available to support the planned future development.

Such an approach is consistent with the multi-level approach identified earlier. In other cases published concerns were with particular aspects of positioning and flexibility. For example, Alcoa in one of its own publications ("A brief history of Aluminum and Alcoa") placed great emphasis on the "versatility" of Aluminium, and identified interests in an extensive range of products, in the following markets: containers and packaging; transportation; building and construction; aerospace and ordnance; consumer goods; electrical components; machinery and equipment; and chemicals. In another part of the same publication emphasis changed to concerns with supply, making it clear that ways were being sought to make Alcoa less dependent on imported bauxite.

Concerns with positioning and flexibility in shipping companies tended to reflect current market conditions. The emphasis in published material was thus more oriented to a flexible approach to markets and operations. For example, in an interview published in American Shipper, ("Strategic

Planning for Bulkiers", Pp 69-70, June 1983) with senior executives of Marine Transport Lines, it was made clear that the company intended to move into a wider range of bulk commodities. This in turn was seen as placing greater emphasis on the development of new vessel types which were primarily multipurpose and combination in nature, giving the line greater flexibility in securing a revenue load and in working out long term contracts. The company was developing an operating philosophy of positioning itself so as to capture a market niche in which contractual arrangements could be effectively fulfilled. Interestingly, apart from an emphasis on market and operational flexibility, the company also placed great emphasis on protecting itself when things go drastically wrong. Similar views were expressed in the 1982 Annual Report of Overseas Shipholding Group (OSG), a company involved in virtually all of the major bulk trades. Considerable importance was attached to the composition of the fleet, which was seen as affording the company a high degree of flexibility in expanding its participation in those markets offering the most attractive chartering possibilities. A modern diversified fleet operating substantially under time charters was seen as rendering the company well positioned to compete effectively in the market place and to take advantage of expansion opportunities as they may emerge.

Several companies made reference to financial resources in their annual reports. The references made above for Exxon, Texaco, Sealand, Powell Duffryn and Marine Transport Lines provide some examples. In other cases the concerns were less explicit, but emphasis was nonetheless given to strong finances, as can be seen from the following extract from the 1982 Annual Report for Sea Containers.

"Our strategy in the meantime is to make ourselves lean and efficient in our existing businesses and to acquire assets which will produce major growth of earnings when the recession is over, yet not be a significant drain while the recession continues. Our finances are strong, thanks in part to our Finance Division, carrying out in 1982 a complex re-structuring of much of the Group's debt, reducing the cost of such debt and improving our cash flow. We have also in 1982 and early 1983 raised some \$67M through sale of preferred and common shares. The blended fixed cost of these funds is 9.41% per annum." (P4)

The above examples display considerable similarity in approach, although emphasis differed from one company to another. A further feature worth noting is that emphasis and hence approaches to strategy changed over time, even within the same company. For example, a company which has just completed a major re-think in terms of its overall strategy, and has established itself in its chosen lines of business, is then less likely to devote too much of its time to consideration of new areas of business, at least until the quality of earnings comes under threat. It is more likely to concentrate on exploring market opportunities for its chosen lines of business, and on operating efficiently and

economically. Such a company is also likely to have a different attitude towards its finances, and financial flexibility, since few major acquisitions are likely to be anticipated in the short term. By way of example consider the case of Moore McCormack Resources, which completed and implemented a major strategic review in the early 1980's. The company was thus able to state in its 1982 Annual Report, that it was well positioned for growth in its primary markets (construction, energy and steel) as these markets recover and develop in the 1980's. This was attributable to the fact that no further substantial investments were needed to repair or replace obsolete assets, and that modern, efficient facilities were in use in virtually all parts of the company. This was seen as providing considerable financial flexibility.

When the published information was backed up by detailed discussions a clearer view emerged, although the earlier reservations on the confidence associated with this analysis need to be noted. The analysis of the discussions and published information suggested that the ideas on positioning could usefully be broken down into four levels, although inevitably some degree of overlap occurred between them. In some cases such a split had a certain artificiality about it. Nevertheless a breakdown into various levels provides useful insights into the complexity of the "positioning" process. The levels identified were broadly as follows:

- (i) Strategic positioning, in the sense of having alternative lines of business which could be embarked on, expanded or contracted as the environment changed. As defined, strategic positioning has a somewhat narrower meaning than is frequently found.
- (ii) Market positioning or flexibility, relating to the ability to enter, leave, expand or contract the markets for goods/services currently being provided somewhere in the organisation.
- (iii) Operational flexibility, relating to the ability to modify operations quickly in the short term, in response to changed circumstances.
- (iv) Financial strength and flexibility, relating to the ability to survive problems and crises, and to implement opportunities as they arise, either based upon existing financial resources available, or on an ability to raise further funds. Included in this category are concerns with share price and survival/bankruptcy.

Strategic flexibility/strategic positioning

The earlier section on areas of business and diversification indicated the extent to which category 1 companies were diversified. While this approach was principally related to quality of

earnings, it also afforded the companies considerable flexibility with regard to the areas of business in which they operated, and considerable changes had taken place, or were planned in 14 of the category 1 companies. At the time of the interviews however, only seven of these companies were actively engaged in serious consideration of changes in the major lines of business. It seems likely that in practice concerns with strategic flexibility of this type will be major concerns arising on a periodic basis, rather than a continuing basis, although a few companies said that a review of their lines of business was a regular part of their corporate planning process.

In practice ideas on strategic flexibility and strategic positioning took a variety of forms, which did not necessarily fit the particular approach outlined above. This is clear from the quotations used above for Sealand, MTL, and OSG. Indeed, virtually all of the companies which were involved almost entirely in shipping activities clearly considered themselves to be strategically positioned for the future, within the industry. Using the four levels outlined above, such positioning would be classified under market, operational or financial flexibility.

Market Flexibility

Examples of concerns with market flexibility were very clearly identified in ten of the category 1 companies. Typically market flexibility was sought through such things as:

- (i) efficient facilities and/or assets
- (ii) the use of vessels with inbuilt flexibility, being either multi-purpose, combination, able to use a large number of ports, and/or able to trade on a variety of routes
- (iii) superior information/data bases
- (iv) efficient agencies spread across all market areas
- (v) a superior sales force
- (vi) a balanced approach to chartering, with a reasonable number of vessels on medium or long term charters, and limited numbers on the spot markets
- (vii) a balanced fleet
- (viii) U.S. flag status, giving access to Jones Act trades, cargo preference, U.S. Government cargoes, and subsidies
- (ix) being a low cost producer/supplier, giving an ability to retain current markets and to expand others in almost any conditions
- (x) providing a high quality service, often on an intermodal, door to door basis

- (xi) high market shares, giving a greater degree of control over the market.

Of the nine companies which did not emphasise market flexibility, seven were already engaged in a number of different shipping markets. Their principal concern was thus to put themselves in a strong position to compete effectively within those markets. Given their involvement in a number of markets, such an approach may well be consistent with ideas on strategic positioning (and undoubtedly was in at least four of the companies), but attaches a much lower priority to ideas on market flexibility. However, of these seven companies, five had actually taken actions which were consistent with the ideas outlined above on market flexibility, although the emphasis was clearly not as great as in the nine companies referred to initially. For example, even in those companies which were building vessels for particular routes (often highly specialised and competitive routes), a certain amount of flexibility was nevertheless being built in. One company which was building vessels for use on one of the most competitive liner routes in the world, where the expectation was that the vessels would spend their entire working lives on that route, made the following observation:

"We are building in features now which mean that those vessels could be operated in other trades. For example, the new generation have side ramps, and we usually see that they can go through the Panama Canal ... any shipowner now would build in as much flexibility as he could."

In spite of these comments it needs to be recognised that a small number of companies existed which had very little strategic flexibility or market flexibility in the short or even medium term.

Operating flexibility

Twelve of the category 1 companies expressed concerns with what might be termed flexibility of operations. In most cases this was achieved through such things as:

- (i) efficient facilities and/or assets
- (ii) the use of vessels with inbuilt flexibility
- (ii) a balanced fleet
- (iv) flexible inventory management
- (v) equipment ownership

It has already been noted that in practice some overlap existed between the four levels. The overlaps were most noticeable in the areas of market flexibility and operating flexibility, particularly, though not exclusively, in those companies which were largely engaged in shipping or marine related activities. For example, the use of vessels with inbuilt flexibility clearly provides flexibility of

operations as well as with regard to markets. The following quotations from the 1982 Annual Report of the Sea Containers Group illustrates this point well.

"All our vessels have been designed with special features which make them eminently suitable for the growing container trades with the developing world, or the carriage of full loads of refrigerated containers, or the possibility to carry roll-on, roll-off cargoes interchangeably with containers ...

"We are studying the practicality of combining passengers and containers in the same vessels. There are many fascinating routes served by container vessels but passenger accommodations are generally limited or non-existent. Passenger ships receive priority berthing which can be attractive to container ship operators accustomed to delays in congested ports." (Pp 6/7)

A few companies had very limited operating flexibility, having committed themselves to certain lines of business. This was true of certain liner operations, and a number of the specialist trades, e.g. LNG ships.

Financial flexibility

Detailed questions were asked of all companies about capital structure, which will be dealt with later. Answers to these questions indicated more general concerns with finance and financial flexibility, over and above capital structure issues. Again, these ideas on financial flexibility "emerged" as the interview progressed, with later interviews being more comprehensive than earlier ones. Five of the early interviews indicated little more than broad concerns with liquidity, and ability to service debt. In most of these, the level of financial resources was fairly high, thus reducing the perceived importance of such factors in the decision making process. In the remaining 14 companies concerns were expressed rather more strongly. In general these companies wished to maintain (or have access to) resources adequate to take opportunities that came along, or to respond to any threats for some time ahead. While never expressed in these terms, the ideas of "action range" and "endurance" put forward by Derkinderen and Crum appeared consistent with the action of most category 1 companies. Concerns with financial flexibility were mainly found in the following areas:

- (i) Adequate financial resources, in terms of cash and short term investments. For example, McLean Industries Inc., the holding company for United States Lines, made a prospectus issue of stocks and debentures in August 1983, the net proceeds of which were approximately \$128M. This issue coincided with a massive investment in 12 new container ships, although these were largely debt financed. The prospectus stated that:

"The Company intends initially to apply the proceeds towards working capital and may in the future apply a portion of all the proceeds towards capital requirements, the retirement of debt and general corporate purposes. The Company intends to invest the proceeds temporarily in short term interest bearing securities." (P4)

This implies considerable concern with ensuring that adequate financial resources were available to support the company's major new investment programme.

- (ii) Access to the financial markets, for more equity, debt or leases. Substantial lines of credit were held. For example as at December 31st 1982, Texaco had unused bank lines of credit in excess of \$1B.
- (iii) Good quality earnings, leading to good quality cash flow patterns.
- (iv) Conservative debt/equity ratios, or concerns with the ability to service debt.
- (v) Well financed assets, leaving adequate financial resources within the company, but not imposing too great a debt service burden on the company.

Interestingly, the level of financial concerns was seen to vary considerably depending upon the kind of activities the various companies engaged in. Reference has already been made to the reasons underlying the disposal of certain shipping activities, and the spin-offs that had occurred in the USA. There is little doubt that in these cases the financial resources needed to support shipping were considered to be far greater than those needed to support other activities, and that certain companies were unhappy with this.

Reference to the subsequent section on capital structure (Section 6.5) provides further support to the above ideas.

2.6 Miscellaneous Points on Philosophy and Strategy

Apart from the various philosophies and strategies identified above, a number of philosophies and strategies were found in a relatively small number of companies.

- (i) Several companies ran shipping subsidiaries principally to provide efficient, low cost and reliable transportation for their own products or inputs.
- (ii) Several companies were concerned to be market leaders, or at least to maintain a reasonable market share. This was often reflected in a policy of providing high quality goods or services, or of being a significant contributor to a particular market sector.

- (iii) Two cases were found where the personality and attitudes of particular senior executives, or of changes in such staff, had a considerable influence on the companies.
- (iv) Several cases were found of past experience influencing, possibly even distorting, attitudes towards future investments or lines of business.

3. Corporate Planning

3.1 Introduction and Summary of Findings

This section is concerned with the identification of the nature, form and content of corporate planning systems, and their importance in investment and financing decisions, for category 1 companies. Overall it is clear that most companies in this category did have formal and sophisticated systems, and that the contribution of these systems to decision making was considerable. Specialist planners and related support staff were frequently found, and there is no doubt that the market analysis done was very sophisticated. Most companies have been fairly successful in identifying areas with a high probability of problems, which goes a long way towards explaining the apparently negative view on certain areas of business referred to in earlier sections. For example, most of the larger public companies recognised at a fairly early stage (many well before 1973/4) the problems which were likely to occur in tankers, because of obvious overtonnaging, and their effects on earnings and their volatility, and made conscious decisions not to enter that market, or to leave it. This negative aspect of corporate planning is interesting. It implies that companies in this category are very concerned with downside risk, because of the effect this would have on the earnings of the group. It is thus completely consistent with the earlier comments on the quality of earnings.

These comments should not be taken to indicate that corporate planning was a negative process. In general the emphasis was positive, and there is little doubt that the detailed planning had helped in the identification of the slots in the market referred to earlier. Indeed, as the research progressed it became clear that a great deal of information was collected as part of the planning system.

This information, which covered a number of areas, provided the basis for most strategic and operational decisions. The precise emphasis varied from company to company, but broad similarities

existed for companies in particular trades, namely the oil majors, the liner trades and the bulk trades. Irrespective of the trades, it is clear that the planning systems provided a context within which individual project decisions could be made. Project evaluation was generally seen as the final stage of a more complex process than is generally assumed in finance theory, with decisions being heavily influenced by the planning process and the philosophies and strategies outlined earlier.

3.2 Corporate Planning Systems

Of the 19 companies in this category, 16 had formal systems of Corporate Planning. Typically these covered periods of five years ahead (12 companies), with one company preparing plans for three years, and two companies preparing plans for in excess of five years. Plans for the later years were generally regarded as more tentative than those of earlier years. Plans in excess of five years were, with only one exception, concerned only with broad trends and related strategic issues. Forecasts for shipping activities were generally regarded as more tentative than for other activities. One company did not specify the period for which it prepared plans. This company commented that, while a formal planning system was in use, the planning department of the shipping division was now smaller than it had been, partly because of a reduction in shipping activities, partly because much of the planning was now done by conferences and consortia. Of the three companies which did not have a formal system of corporate planning at the time of the interviews, two had undertaken major ad hoc strategic planning exercises. In one of these the plans, which were extremely detailed, covered a fifteen year period. This company has since introduced a formal corporate planning system. In the other company the strategic review had led to some highly significant investment and disinvestment decisions. In the remaining company which did not have a formal planning system, there nevertheless were two full time economists and associated staff constantly reviewing markets and economic conditions, effectively carrying out some of the functions of a planning department. Two of the three companies which did not have corporate planning systems were involved largely in shipping activities.

In several of the companies plans existed for certain aspects of the business for periods well beyond the five years referred to above. For example, a number of companies involved with oil exploration, or natural resource industries, had outline plans for the exploration and sources side of their business for well in excess of five years. In terms of detailed corporate plans, however, five

years was seen as a reasonable compromise. For example, one company rationalised its choice of five years in the following way:

"We worked our way to the five years. It's been three years, it's been ten, but for most of the time it's been five, and it probably will stay five ... in this business it's difficult enough to look to next week, and it's ludicrous in a lot of ways to look ten years, although we do have capital projects that are twenty five year capital projects. It doesn't do you any good, for planning purposes, to look significantly beyond five years when it comes to forecasting markets and competitive actions. You can't just look five years. You've got to at least think about what's going to happen beyond that, but in terms of forecasting markets and competitive actions, and financial information, it doesn't make much sense to go beyond five years, so we've chosen five years."

Other companies expressed similar views. In general five years seems to be regarded as a long enough period to consider a range of strategic, market and operational issues, yet one which is not so long as to reduce confidence in the planning system to a low level.

While specific reasons for planning were seldom given, the general attitude underlying the preparation of plans was consistent with a search for regular earnings, or at least with the avoidance of shocks caused by a rapid decline in earnings. Fairly well developed corporate planning systems were also seen as being appropriate for companies in this category, since this was what the market was thought to expect of companies in their position. Whether such expectations really exist is far from clear, but certain management teams clearly felt the need to respond to such implied requirements. This is consistent with earlier ideas on the responsibilities that go with being a public company. Careful planning was also considered necessary to ensure flexibility of the type referred to in earlier sections.

3.3 Form and Content of the Corporate Plans

It is interesting to note that in spite of all the many criticisms that have been made of financial accounting, almost all companies in this category used the three basic financial statements as a financial model of the business, and plans were essentially fed into this model. Planned results were then expressed in terms of five year figures for:

- (i) Profit and Loss
- (ii) Balance Sheet
- (iii) Funds Flow Statement

The rationale for this was clear, in that these statements, when prepared historically, provide the

basis of the majority of official communications to the market. Also financial control systems, which are undoubtedly the most sophisticated of the internal control systems, provide basic information of this type, thus enabling actuals to be carefully monitored against plans. Detailed annual budgets were almost universally prepared.

An extremely important part of the planning framework concerned with cash flows was the preparation of a forecast to do with debt service requirements. While in some instances ships were still owned by "single ship" subsidiaries, and occasionally parent companies attempted to avoid giving guarantees to cover subsidiary debt, there is no doubt that the debt service commitments for companies in this category were seen as corporate wide commitments, and the planning was consistent with this view. Practice varied somewhat, with approximately half of the companies dealing with debt service as a "highlighted" part of the funds flow forecast, and half making separate detailed forecasts. In almost all cases serious consideration was given to the relationship between potential earnings and debt service commitments, both in terms of size and timing. Exceptions to this occurred only where debt/equity ratios were low, and thus debt service commitments represented a relatively small part of potential earnings.

As the study progressed it became apparent that, in the course of the preparation of corporate plans on a regular basis, a great deal of basic ground work was carried out. In general, macro-economic variables were fairly thoroughly analysed, as were the industries of most relevance to the company. Supply and demand conditions were typically analysed in some detail. Political factors were frequently considered. Indeed, it was typical to find that the strategic issues facing a company had been carefully considered well before detailed thinking about an individual project took place. The preparation of detailed corporate plans usually meant that most companies had, within their plan, a pretty clear idea as to when they would need to acquire new assets. For example, one company, in discussing the relationship between its corporate plans and its decisions to buy ships, said:

"One is laying down, in our case certainly, in the five year plan a pretty clear idea as to when we regard ourselves as requiring. Then when we come down to the individual decision our number crunching is essentially based upon our earnings for that particular ship, and how that comes back into return on capital, and what the impact is on the overall profitability and earnings of the fleet or the company."

The context of individual capital decisions therefore needs to be recognised. In almost all cases careful consideration had been given to strategic and economic variables well before detailed individual analysis took place. This is a point which will be returned to later.

The research and discussion on this area expanded considerably as the interviews proceeded. In the pilot study the questions asked were fairly general, as the original intention was to concentrate more on individual project analysis than on corporate planning systems. As has been pointed out above, it soon became clear that such an approach was simply not realistic, and in later interviews in the UK more detail was sought, particularly on macro-variables and supply and demand forecasts. In the United States questions were based on the model set out earlier, derived by Temple, Barker, Sloan and Delta lines for the U.S. Maritime Administration (1982). This approach made difficult any kind of quantitative analysis, but did permit the gradual identification of the critical factors in investment decision making.

The general informational content of the TBS model was based upon the following areas:

- (i) Industry data
- (ii) Company data
- (iii) Market data - which included large sections of economic and demand side data
- (iv) Competition/Capacity data - which included supply side data
- (v) Other environmental data

Such a model is clearly based upon shipping activities, and many of the companies involved in this survey were diversified. Given the aims of this thesis, the analysis nevertheless concentrates on general issues and issues relating to shipping.

In practice companies did not usually think in quite the way implied by the above headings, but the information generally sought was similar. Typically the information collected could be categorised as follows:

- (i) Macro-economic factors - including forecasts of world trade, GNP of various countries, interest rates, exchange rates, inflation rates, etc.
- (ii) Applications to shipping - including forecasts of product and commodity flows. These usually attempted to estimate the demand for the company's shipping services.
- (iii) Supply side analysis - including the analysis of present fleet configurations (in detail), new buildings, scrappings, lay-ups, changes in technology.
- (iv) Competitor analysis - including detailed comparisons of cost and, in some cases, market share, quality of service, etc.
- (v) Company data - covering past and current performance figures.

(vi) Environmental data - covering legal, regulatory, political and other environmental factors.

Not all companies in the survey collected all of the above information, and the relative importance of each section varied somewhat. However, as before, the main differences arose between the oil majors, the liner trades, and the bulk trades. Companies with both liner and bulk interests tended to have different implementation and weighting procedures, even if a central information data base was used.

Table 6 provides an indication of the number of companies collecting information of the type outlined above, both in total, and in terms of a broad division between the oil majors, the liner trades and the bulk trades. It should be noted that several companies had significant interests in both liner and bulk trades. These companies are thus shown in the columns for both trades. The final column represents the total number of companies collecting information of a particular type, and is not a total of the previous three columns. Several companies also had shipping activities in other areas (e.g. cruise ships, LNG ships etc.). Information collected for these varied somewhat, but a high level of background information was typically collected for such activities, of a type which is consistent with the total figures shown above. Given the earlier comments made about the development of questions on this area, Table 6 should be seen as an indication of the minimum numbers collecting information of a particular type, rather than actual numbers.

Information Sought	Oil Majors	Bulk	Liners	Total companies
Macro-factors	1	6	7	13
Shipping applications	2	7	8	16
Supply side analysis	2	9	10	19
Competitor analysis	2	-	7	9
Company data	1	3	2	6
Environmental factors	2	1	3	6
Total companies	2	9	10	19

Table 6 Background information sought as part of the planning process in Category 1 companies

This table indicates the high degree of sophistication of planning systems for category 1 companies. Of particular interest are such things as detailed supply side analysis, found in every company in the sample. Also of interest is the striking difference in attitude towards competitor analysis. On reflection this is not particularly surprising, since most bulk operators, however large, still make up a

relatively small part of the total market. The identification of competitors would not be easy, so a detailed analysis of specific competitors would be of little use. This is not the case with the liner companies or the oil majors. Competitors are small in number and easily identified. Concerns with market share and its preservation were typically found. Hence detailed competitor analysis formed a significant part of the planning for such companies.

In some respects the above table is misleading. In particular, it does not provide an indication of the amount of information collected, or the emphasis given to it. In detailed discussions it became clear that for the bulk trades the collection of information of the first type was extremely broad and general, and even the second type was fairly broad and sporadic. On the other hand, the emphasis given to the analysis of supply/demand relationships at a global level, but for different size and types of vessel, was considerable. A further factor which is potentially misleading in the table concerns company data. While not emphasised in the discussions there is little doubt that knowledge of costs, both operating and financing, and of cost/revenue relationships, was detailed and accurate, and provided a broad background to the planning systems.

In order to provide a better indication of the type of information collected, and its importance in the planning process, and associated decision making, a broad summary is given below of the approach in the three major areas of activity. These summaries cover the information collected as part of the planning/decision making process, but also provide a lead in to decision making on a project basis. They thus provide a link between this section on corporate planning, and the next on project evaluation.

The Oil Majors

These appeared to start with a sophisticated and highly integrated picture of world economic and energy development. From this the outlook for oil and gas in terms of total energy needs could be established. Estimates, which were typically reviewed annually, usually covered 15–20 years. These estimates were usually broken down to cover different countries of the world, and these latter figures provided specific inputs into shipping decisions.

The next stage typically consisted of what one executive described as *"lots of marine analysis"*, starting with a detailed tracking of the industry as it currently existed. Typically the exact usage of ships in the trade was known, even down to tied up ships. Forecasts were made, usually of a very detailed type. Both sides of the supply and demand analysis were given a lot of attention, as was the analysis of competitor behaviour. In making forecasts and estimating future rates a lot of

sensitivity analysis was typically done.

In terms of investments in shipping (or disinvestment), one of the principal concerns of the oil majors was estimating future chartering rates, since this would enable decisions to be made about the relative merits of the buying or chartering of vessels. In attempting to make rate forecasts considerable attention appeared to be devoted to ascertaining the rate setting mechanism. For example, one executive expressed his views as follows:

"We go through a lot of pain trying to find what is the rate setting ship out there ... What is the rate setting mechanism, near term, on out through the long term, which then involves estimates of what a new building vessel will be like, what are the characteristics of it, what's the fuel consumption of it, what's it going to cost to build it. It's a cost based rate setting system that we revert to in the longer term. Then we estimate ranges around that as to the uncertainties that may exist."

Once the rate setters had been identified, competitor analysis concentrated on ascertaining whether the current tanker mix put the company at a cost advantage or disadvantage.

In the final analysis, decisions were made about individual ships, but decisions were typically made initially in fleet terms, with a number of different classes of ship being identified. Total requirements by class of vessel were ascertained, and compared with current supply, thus raising the relevant issues. A cost of service analysis was then typically made, enabling the companies to sort out the best and worst vessels. Alternative courses of action would then be considered, including the extension of the economic life of vessels, tying up vessels for several years with the possibility of subsequent break-out and re-use, buying or selling, chartering in or out. (This approach was of course, usable for both investment and disinvestment decisions, and the latter are currently more common.)

In coming to a final decision discounting techniques were usually used, but cash flow profiles were also important, since the rate forecast was recognised as suspect.

Legal, political and environmental issues were generally watched carefully, with a number of "what if" questions being asked.

The Liner Companies

In general similar procedures were followed to those of the oil companies, although variations clearly existed, particularly with regard to the degree of sophistication found. The starting point in the more sophisticated companies was generally some kind of forecast of the economies of the countries with the greatest influence on the trade of the shipping company. This in turn provided the basis for forecasts of the shipping markets themselves, which appeared to be done in considerable detail in all

companies in this category. For example, the model set out by Temple, Barker, Sloan was based upon the planning work done at Delta Lines. The database and forecasting ability of Sealand is most impressive. The detailed market analysis and forecasting done by the various conferences and/or consortia also needs to be recognised. One of the means of assisting such forecasts was through the use of information provided by various agencies and offices throughout the world, and such agencies and offices tend to go hand in hand with a regular liner trade. A very wide range of sources appeared to be used by the liner companies to support their forecasting processes, the general aim of which appeared to be to obtain an estimate of demand.

The supply side analysis was also typically done in considerable detail, and covered capacity analysis through the identification of new buildings, scrappings, companies leaving particular markets, new entrants, etc. In the liner trades the concept of market share appeared to be important. As has already been pointed out, competitors can be easily identified and analysed, both from a cost of service aspect, and from an overall assessment of financial strength and flexibility. Particularly important in this analysis was a comparison of cost per TEU slot, since individual liner companies tend not to be able to set the market rate individually. The philosophy would appear to be that if you cannot control the market rate, the best way to survive and/or make profits is to be a low cost operator. In fact knowledge of competitors costs appeared to be widespread in the liner trades, and certain investment decisions (e.g. US Lines recent decision to build 12 new large containerships) appeared to be motivated largely by a search for lowest costs per TEU. In certain cases, concern with cost was far greater than concern with revenues, presumably on the grounds that revenues were (or should be) heavily influenced by cost considerations. While this may be true in some circumstances, conditions of overcapacity can destroy such a relationship, at least for a time. A search for low cost, while a necessary part of any investment decision, needs to be recognised as only part of the process. Indeed, there are already signs that the emphasis on more efficient ships with lower operating costs may well be about to plunge the liner trades into the same kind of overcapacity situation which has bedevilled the tanker trades for the last ten years, and sections of the dry bulk trade in more recent years.

Once estimates of supply and demand were put together the question of the need for further capacity could be raised. Thus in the liner trades decisions tended to emphasise total corporate capacity with the result that decisions were thought of in fleet terms, rather than individual vessels. If further capacity was needed then various alternative ways of achieving this needed to be identified and

examined. At this stage alternatives such as fleet re-deployment, chartering or building were typically considered. The decisions appeared to have three phases.

- (i) Was extra capacity needed – which was probably the most important part of the decision?
- (ii) What was the best way to add capacity – redeployment, chartering, or buying?
- (iii) Then – and only then – what was the best kind of vessel to acquire?

The first of these required careful consideration of the expected supply/demand relationship, and expected utilisation rates. This in turn enabled estimates of additional loads to be made, from which more detailed estimates of operating costs, operating revenues and fixed costs could be made. Such estimates were made in broad terms, and further refinement was required later, if stage (c) was reached.

The second aspect of the decision required careful consideration of longer term needs, timing considerations, and the current state of the market. Only at the third stage would detailed consideration of vessel type come in, although clearly some broad alternatives would have been considered in the first stage. However, it needs to be recognised that decisions about specific vessels were only the final part of a more lengthy process. For example, the "replacement" for the Atlantic Conveyor, sunk in the Falklands war, was in no sense a pure replacement, but a ship built to slot into a specific liner trade, where the emphasis was on the total trade.

The extent to which other environmental, legal or political information was built into the various decisions was less clear. Generally it seemed that little was done to plan for changes in these areas, other than where there was a very high degree of probability of occurrence. Occasionally "what if" analysis was done, but even this was rare. However, the nature of a liner company is such that a constant stream of information comes into the head offices from agencies and branch offices overseas. Thus most liner companies have a fairly clear idea regarding the following items, even if no formalised data collection system is used.

- (i) Legal factors – domestic legislation (e.g. MARAD) – UNCTAD
- (ii) Political factors – state of economy and politics of countries with which trade occurs.
- (iii) Labour relations.
- (iv) Technology – particularly, but not exclusively, in new ship design and fuel economy.

The bulk trades

It has already been noted that two of the three category 1 companies that did not operate

corporate planning systems were in the bulk trades. Even where such systems did operate, the emphasis was generally different to that found in the oil majors and liner companies. In very few cases were detailed forecasts made of general macro-economic conditions. In practice most bulk companies kept general information on macro-economic factors, but this information was not typically used to forecast future conditions, but to provide a general background to the planning and decision making process. Similarly, most such companies obtained information on an historic and forecast basis, for a variety of bulk trades, such as oil, ore, agriculture, etc. In a small number of cases specific forecasts were made in house. More usually they were purchased from consultants or similar agencies. Such forecasts again typically formed a general background against which decisions were taken. Very little detailed work appeared to take place with regard to breaking down estimated product movements to particular trades. The analysis was typically global with limited regional subdivisions.

Not surprisingly, therefore, considerable attention was paid to overall supply/demand relationships. Typically this was subsequently broken down into quite small divisions with regard to classes of vessel. Companies tended to search for vessels which were not in oversupply in the world markets, (or in protected markets such as the Jones Act market). Decisions were usually made on an individual vessel basis, though most companies involved in the bulk trades were concerned with the overall balance of their fleet. In very few cases, in today's market conditions, were decisions made on the basis of detailed or sophisticated forecasts of product movements, or long term charters. In general the approach seemed to be much more opportunistic, and concerns were more with the preservation of flexibility. As has been pointed out, detailed competitor analysis was virtually non-existent, although most companies had a reasonably good idea what was going on in the market in general terms. Limited environmental and related information was automatically sought, though in some cases particular information was sought e.g. in relation to U.S.aid.

Conclusion

Clearly substantial differences exist between the three types of activity, and the relative importance attached to each kind of information sought is not made clear by the numbers shown in table 6. Since companies were not specifically asked to rank the information sought, in terms of its importance to the decision making process, any attempt to do so must be necessarily somewhat subjective. In spite of this, table 7 attempts to summarise the discussions so as to provide a broad indication of the relative importance attached to each area, but its limitations must be recognised.

Information Sought	Relative importance		
	High	medium	low
Macro-factors	Oil majors Liners		Bulk
Shipping applications	Oil majors Liners		Bulk
Supply side analysis	Bulk	Liners Oil majors	
Competitor analysis	Liners Oil majors		Bulk
Company data		Liners Oil majors	Bulk
Environmental factors		Oil majors Liners	Bulk

Table 7 Relative importance of information sought - category 1 companies

4. Project Appraisal

4.1 Introduction and Summary of Findings

This part of the study aimed to ascertain the extent to which traditional financial evaluation techniques were used in practice, and the weighting given to them. It also aimed to identify any other factors of relevance in project appraisal. A great deal of overlap was found to exist, for category 1 companies, between the corporate planning systems and individual project appraisal. Indeed, it was clearly the case that most projects effectively "grew out" of the strategic plan, and had thus been very carefully discussed in the planning process. In many cases decisions to invest had been made in principle, at the planning stage, leaving the final project evaluation to fine tune the decision. In such cases the question of where and when the decision was effectively made was found to be extremely difficult to answer. Other projects were rather more opportunistic. The analysis of such projects typically concentrated rather more on strategic issues.

Substantial use was made of the traditional evaluation techniques, with virtually all companies using at least one of the discounting techniques. The IRR was the most favoured. Nevertheless, subsequent discussion and analysis made it clear that these techniques formed a relatively minor part of

the overall evaluation process, albeit a necessary hurdle. In practice more emphasis appeared to be placed on the overall effect of projects on corporate financial statements. Projects which had adverse effects on any such statements were frequently rejected. Cash and earnings profiles were significant, as was debt service ability. In a small number of cases breakeven rates were calculated. Overall the conclusion must be that the investment decision in category 1 companies is a multi-stage decision, in which discounting and other traditional evaluation techniques have a role, albeit relatively minor. These writings are consistent with the criticisms of finance theory made by writers such as King (1975) and Pinches (1982), discussed in Chapter 3.

4.2 Background to Project Appraisal

In general most companies investment decisions fell into two main types, but the division was implicit rather than explicit.

- (i) those projects which were consistent with, and "grew out" of the strategic plan;
- (ii) opportunistic projects.

The first type were clearly considered in strategic terms as part of the planning process, and were thus the result of a careful study of a variety of strategic, economic and market factors of the type discussed in the section on corporate planning. In general, it may be said that in this part of the process, the companies were looking for a "slot in the market" which was consistent with their existing business. It has already been pointed out that in the majority of cases, and virtually all cases other than bulk shipping, this "slot" referred to large investments, in fleets or classes of vessel, rather than in single ships, so the analysis made consisted of large elements of "system" analysis, rather than project analysis. There is no doubt that this "system" or corporate analysis was far more important than individual project analysis. The detailed project analysis was thus very much the last stage in a fairly lengthy planning process.

Several companies explicitly made the point that inclusion in the strategic plan was a normal pre-requisite for consideration of an investment, although non-inclusion would not automatically preclude consideration of a project. Virtually all companies adopted such an approach implicitly, and there is little doubt that most decisions were of the type that "grew out" of the strategic plan. Funding considerations were sometimes an important factor in this. For example, one very large company, with

a high level of financial strength, nevertheless adopted a policy of *"robbing Peter to pay Paul"*, in the sense that funds for new projects, not previously considered in the strategic plan, could only be obtained by dropping other projects in the strategic plan.

Consideration of the decisions made on the acquisition of vessels provided good illustrations of the above points. In a number of cases so called "new building" programmes were in fact "replacement" programmes, where the aim of the strategic plan was to make the fleet more cost efficient or more flexible. In other cases decisions were made which helped to support an existing trade, or to develop a new trade. The rationale for two such cases, both of which were clearly developed through the corporate planning process, are given below by way of example.

"Cruising is an area that we have decided we want to be in, and support, strategically ... the rationale is, supporting a business which has been successful, ... but which (a) needs to keep up to date with the competition, ... and (b) to expand a business which has proved, in a fairly competitive market, that it can do quite well."

"The rationale basically was to get into a new trade, a fairly high technology trade, which we could probably develop and get an expertise in, which would give us a market lead, at least for some years."

The second group of projects might be termed "opportunistic", in that they represent projects which are the response to an opportunity. A small number of examples of this type were found, such as the acquisition by Cunard of the fleet of fruit carriers owned by Maritime Fruit Carriers, which was clearly an opportunistic decision. The earlier sections on positioning and flexibility indicate that in many companies an ability to respond to opportunities was seen as being an essential part of the strategic planning approach, and such companies clearly kept an eye on the market.

In practice it is sometimes difficult to distinguish the two types of decision. For example, the take-over bid made in 1983 by Trafalgar House for P & O was made at a time when it is unlikely that Cunard (the TH subsidiary) could justify major expenditure on new ships, as ships. In a sense such a bid may therefore be viewed as opportunistic. However, with a company like Trafalgar House, which has a reputation for sound acquisitions, it is unlikely that the bid was not extremely well researched over a lengthy period of time. The acquisition of Heublein by Reynolds Industries, discussed in section 2.4, provides another example of the difficulty of categorisation of this type. Clearly it is possible for the categories to be related in the sense that the strategic plans may well point to the need for further major developments, but that such developments have to arise on the market before they can be taken.

It was generally found that the approach to these "opportunistic" projects was rather different

to that for the first category, and that a more ad hoc approach was used. Typically, very much more time was spent in specifically considering the strategic issues that arose from individual opportunistic projects than those which grew out of the strategic plan. This was simply because the strategic factors had been regularly considered for projects in this first category; whereas they had not, at least not in the same way, for the second group. Hence the analysis of this second group included very much more consideration of risk and the overall effect on group figures. Once this strategic analysis had been done it was usual to find the same kind of numeric analysis being made, but this analysis, while important, tended to be secondary to the strategic considerations. Nonetheless, if the numeric analysis indicated that the project was not really viable, it probably would not be done. In short, project evaluation of the type included in the majority of finance text books has a role in investment appraisal, but as only one fairly small part of the total process.

4.3 Appraisal Methods used

Given the initial emphasis of this project, detailed questions were asked throughout the survey about the kind of forecasts prepared, to support individual project analysis, and the appraisal methods used. Specific questions were asked about forecasts of revenues, costs and disposal values, and the periods for which such forecasts were prepared. The results for the operating costs and revenues are shown in table 8. Nine companies made estimates of disposal values, but reservations about the usefulness of such an estimate were common.

Period Ahead in years	None	1-2	3-5	5-10	10+	Unspecified	Other
Operating costs	-	-	2	1	14	1	Various to life
Operating revenues	1	-	1	1	14	1	(1)

Table 8 Forecasts of costs/revenues - Category 1 companies

The company which did not forecast operating revenues typically used its knowledge of current freight rates to give it a reasonable idea of the expected revenue/cost relationship. The two companies preparing forecasts of revenues and costs for less than five years were both involved predominantly in the bulk trades.

Eleven companies adjusted their forecasts for inflation, typically using a variety of indices. Four

companies used figures expressed in "current" terms. Two companies did not adjust their project forecasts, but discussed the inflationary issues and assumptions in detail as part of the evaluation. In two cases answers to the question in the context of project forecasts were unclear, but inflation was dealt with in detail in the corporate planning system. In most cases, where adjustments were made the basis for the figures was set out in the corporate plan. At least four companies used forecasts on both a constant basis and an inflation adjusted basis (or bases), with the idea of getting a better understanding of the potential impact of inflation on the profitability of the project.

In discussions the problems of making inflation adjustments were made fairly clear, as is indicated by the following comments made by the Finance Director of a large UK company.

"We're be-devilled with the problem of inflation. We have big debates on whether to include an inflation rate or not, as we haven't really resolved it. Because of course if you include any sort of inflation rate your revenues soon go sky high, and your margin is getting wider and wider, so your profit's looking wonderful. But it doesn't actually happen like that ... Everybody predicts an ever upward trend and it doesn't happen ... no-one can actually predict when this will happen or when that will happen."

In spite of these comments this company included inflation adjustments in its forecasts, though little reliance appeared to be placed on any figures going out beyond five years.

The next set of detailed questions concerned the project appraisal techniques actually used. Specific questions were asked about the use of Payback, Accounting Rate of Return (ARR), Net Present Value (NPV) and Internal Rate of Return (IRR). Information on other techniques used was also sought. Table 9 provides a summary of the use of the traditional techniques.

Number of Methods	Payback	ARR	NPV	IRR	Total
No methods					1
One method		1	1	2	4
Two methods	3	1	1	3	4
Three methods	6	3	5	7	7
Four methods	2	2	2	2	2
	11	7	9	14	18

Table 9 Appraisal methods used – Category 1 companies

In only one case was a clear cut answer not obtained. In this case no major decisions had been made in shipping in recent years, so it was impossible to back up the questions by reference to actual decisions. The discussions nevertheless suggested that, in principle, the company would use most of the available techniques. The company shown in the table as using none of the traditional techniques had in fact carried out a major strategic review of its activities, included in which were detailed forecasts for the company, including major new initiatives, over a long period. It was thus not considered necessary to follow through these figures to obtain an NPV or IRR for the new ventures, since the overall corporate return on capital was adequate. In discussions it was explained that discounting techniques would be used to help evaluate non necessary investments where alternative courses of action were available. In the remaining cases few examples were found of companies relying on single techniques. Of the four companies shown as using one method in the above table, two indicated that other methods might be used in certain circumstances. In the other two companies a number of other calculations and techniques were used, other than the traditional techniques referred to above. In both cases the decisions were made as part of a rigorous planning process.

As shown in table 9, payback was used in eleven cases, though for shipping transactions this was usually done on an after interest and loan repayments basis. Two companies specifically referred to the use of discounted payback. The accounting rate of return for individual projects was seldom calculated, but the effect on overall return on capital was calculated in seven of the 18 cases, as part of a wider analysis of the type discussed below. Sixteen of the 18 companies included in table 9 used one or two of the dcf techniques, with the IRR being favoured. The calculation of NPV was less common than IRR, and some answers indicated confusion with regard to its meaning. Other criteria were identified in a small number of cases, usually being concerned with profiles over time of cash flows or earnings, or the calculation of break even rates. Six companies placed great emphasis on cash or earnings profiles for individual projects. Four companies calculated break-even rates, three relating to freight rates, one relating to utilisation. Three others paid particular attention to careful consideration of the relationship between revenues and costs.

Detailed follow up questions were asked about the cash flows used for discounting purposes, and about the choice of discount rate. The results are summarised in table 10.

Basis of discount rate	Basis of Cash Flows		
	assumed 100% equity financing	incorporating financing flows	Total
Weighted average cost of capital	5	-	5
Linked to borrowing rate	4	4	8
Other	1	2	3
Unspecified	-	2	2
	10	8	18

Table 10. Basis of cash flows used in discounting/choice of discount rate - category 1 companies

Two of the 16 companies using discounting techniques carried out computations based on both of the two methods shown above, accounting for the total of 18. Somewhat surprisingly, only 5 companies used weighted average cost of capital as the basis of the discount rate. In two of these cases the impression given was that the figure used was an approximation (even a guess), without any formal calculation being carried out. In one case the calculation was based upon book value weights. In eight cases (representing 6 companies), a rate was used which was linked to the borrowing rate. Four of these companies used a rate based very closely on the actual cost of borrowing. Two used the rate of interest as a base, but added sizable percentages (3 - 8%) as risk premiums, thus converting the rate into a more appropriate figure. Of the three companies using "other" rates, two appeared to use figures deemed appropriate to equity returns for a given degree of risk (typically 20 - 25%, according to the perceived risk), while the third used a variety of rates, depending upon circumstances, few of which were made clear. Two companies did not specify particular rates. These results indicate that a variety of approaches existed, with regard to both discounting, and the choice of discount rate. A number of errors, inconsistencies and a certain amount of confusion clearly exists with regard to the application of the traditional techniques. These will be examined further in chapter 11.

The above results appear consistent with other empirical studies referred to in Chapter 3. They indicate a role for the various techniques, particularly the discounting techniques. However, the comments of the previous section have already made clear that these techniques represented only a

relatively small part of the total analysis. In the course of this study considerable follow-up discussion took place with regard to the importance of these techniques in the total appraisal process. No attempt was made to formally assess the relative importance of the various techniques, in the sense of using a structured ranking approach. The concern was more with the identification of broad indications of the importance of various techniques in the appraisal of different types of projects in different kinds of company.

Inevitably such an approach can only be impressionistic. However, reservations about the usefulness of the four traditional techniques were expressed in a number of cases. Examples of the sort of comments made are given below:

"I don't think any of them (the four appraisal techniques) could be looked on as a sacred cow type of approach ... There's always a danger of people saying, 'we've done this scientifically, therefore it's correct'. Often all you're doing is putting your assumptions down a different way ... It's the assumptions which are the problem. The calculation, that's arithmetic, it helps, but no more than that."

"I have a very strong feeling that ... whoever invented return on investment did a great dis-service to American business, because what happens ... is that you tend to depend too much on the quantitative analysis which replaces business judgement."

An executive in another company summarised his views on investment decisions by saying that the final decision was *"80% a business decision, and 20% a numeric decision"* The implication of this is that numeric analysis of the traditional type is a relatively small part of the overall investment decision.

Reservations of this type are essentially based upon the problems of defining assumptions and making forecasts of reasonable accuracy. Other reservations were concerned with the weighting given to the techniques. They typically confirmed the earlier comments that in general the various techniques used are viewed as hurdles, but that they represent a quite small part of the total investment decision making process. One such example is given below.

"We do not give much weighting to the dcf. We do look quite closely at the impact on the profit and loss in the first few years. We look at the impact on the groups gearing and on the groups interest cover. So financially, these are really the numbers that we look at. And then of course, the judgement is on all the other underlying assumptions which make up the project."

In fact subsequent discussions made clear that in many companies calculations as to the effect, on the strategic plans and overall group figures, of various projects, were more important than the traditional techniques, and often represented the most important aspect of the decision. Examples were found where projects were rejected because of an adverse effect on one of the corporate financial

statements, as indicated in the following statement.

"So, automatically, as a matter of routine, a new project would be fed into the system to see its effect on both group and divisions Profit and Loss and Cash. It is thus quite possible for a project with very good returns, but which has adverse effects on the Balance Sheet for a couple of years, to be rejected on the latter basis."

In other cases comments on the role of discounting were followed by further discussions of the factors given weight in decision making. For example:

"Yes, we do use dcf, and we do all the numbers, and we say, isn't that a good yield, and then we spend far more time looking at the profit and loss account for the first five years, and looking at the earnings level, compared to today's earnings level, necessary to make an investment which provides an adequate rate of return. This return means in an accounting sense, What will it do to the return on shareholders funds? What will it do to our interest cover? What will it do to our Balance Sheet? These are far more important than what the dcf calculation shows ... At the end of the day any investment decision is a highly subjective decision, particularly in shipping".

Clearly analyses of this latter type were not particularly important for smaller projects, since global estimates would already have been included in the plans, but for all major decisions this represented an extremely important part of the decision. The previous section on corporate planning has already shown that forecast financial statements were prepared for some years ahead, as a matter of routine, for virtually all category 1 companies. The overall effect of the various proposals on corporate financial statements were thus automatically considered. It is not clear whether every individual project was assessed in terms of its effect on the financial statements, although this appeared to be the case in at least six companies. Within the overall analysis particular emphasis was placed on cash flows because, given the size of cash flows involved, a lack of careful planning in this area might well create undesirable problems for the overall organisation. Apart from general concerns with cash flows, eight companies emphasised careful analysis of debt service requirements, typically on both a project and a corporate basis. Most of these companies had very considerable activities in shipping, which made up the bulk of their activities. The high cost of assets, the relatively large debt typically associated with vessel acquisition, and the current volatility of the markets, all contributed to the perception of shipping as a potentially very risky business. Debt must be serviced if a company is to survive. A debt service analysis of the type referred to above is thus perceived as an essential part of the decision making process. As one executive put it: *"If everything went down the chute, can we absorb the shock?"*

Overall, therefore, it appears that the cash profiles of a project, and their effects on overall

group results, as measured by the financial statements, are a more important part of the decision making process than the calculation of dcf returns. Particular features which were given weighting were:

- (i) regular earnings were much preferred to volatile earnings, so that it is likely that less volatile projects with lower returns would be preferred to more volatile projects with greater expected returns. "Expected values" did not figure very large in the decisions;
- (ii) earnings profiles, with some companies requiring the making of profits from day 1, though this varied according to the proportion of total company business that was in shipping. The higher the proportion of shipping business, the less important such an objective becomes;
- (iii) shipping projects are typically long term, but loan repayments, and associated interest, are usually required over shorter periods (typically 8 1/2 years). Satisfactory profits may thus be achieved at the same time as a fairly disastrous cash flow pattern is occurring. Great attention is thus paid to the cash flow effects of projects, particularly over the first five years or so. The poor management of cash flow can have very serious, possibly catastrophic, consequences for a business.

Interestingly, very few of the ideas discussed in this and the previous section are mutually exclusive. The above comments certainly do not invalidate the use of the traditional evaluation techniques. Such techniques can, and should, form part of a multi-stage evaluation process. In practice, however, a number of stages of evaluation appear to exist, and the weighting given to the traditional methods is quite low.

5. Risk in Investment Decisions

5.1 Introduction and Summary of Findings

The earlier sections on philosophies and strategies, particularly those parts relating to quality of earnings and flexibility, makes it clear that most category 1 companies are risk averse. One might therefore expect to find that the treatment of risk analysis would be fairly sophisticated, with a variety of techniques being used, to deal with risk at two levels, namely:

- (i) Project risk
- (ii) Corporate risk

Considerable emphasis is placed on the former in finance texts, and a variety of techniques have been developed for dealing with it. Serious consideration of the latter is a more recent innovation, and the emphasis is on bankruptcy costs. In practice the emphasis found was somewhat different, with consideration of corporate risk generally being given a much higher priority than individual project risk. Other than sensitivity analysis, which was used in the majority of cases, very few applications were found of the techniques used to deal with project risk, and very little consistency was found in the use of such techniques. The use of probabilities, expected value, simulation techniques, and similar analytical techniques was found to be almost non-existent.

5.2 General approaches to Risk

In practice assessments of corporate risk were generally made in two areas

- (i) Corporate financial risk - related to the ability to service and raise debt, and to make the necessary payments to cover operating costs.
- (ii) Business risk - related to the ability to keep a balanced diversity of interests, or (in the case of shipping companies) to keep a balanced fleet in full or near full employment, so as to achieve an appropriate quality and level of earnings.

Clearly the need for profits, and the risk of not making profits, would need to be covered in both areas, and in a sense was the overriding consideration. However, the nature of the corporate planning systems for category 1 companies needs to be remembered. Undoubtedly a primary, if implicit, aim of these systems was the identification of the kind of circumstances which might pose problems over the next five years or so, in terms of markets, profits, liquidity, etc. Hence risk analysis of the above type must be perceived as an essential and integrated part of the planning systems.

In passing it is perhaps worth noting that companies did not attempt to make any estimates of possible bankruptcy costs. Rather, they attempted to ensure that liquidity was sufficient to carry them through a series of adverse events. If insufficient resources were held to carry a company through, then the chances of such an investment being made were almost zero. The concern with bankruptcy costs found in the finance literature had no exact counterpart in practice. Circumstances and investments which might lead to possible bankruptcy (or lesser financial difficulties) were typically identified, and then avoided if it were at all possible. Risk could be, and frequently was, reduced by the

holding of cash reserves or short term investments, and credit lines or revolving credit agreements.

As far as business risk is concerned, earlier sections have identified the concern with diversification and a spread of interests. For shipping companies this usually translated into a desire to have interests in a number of different types of vessels, and/or use of a number of different sized vessels, and/or involvement in a number of different markets/geographical areas. However, almost by definition, such an approach is part of strategic planning, rather than individual project appraisal.

5.3 Analytical Approaches to Risk

The only analytical approach to risk which was used regularly and systematically was sensitivity analysis. Seventeen of the 19 companies used this technique as a regular part of their planning process. The majority of companies analysed sensitivity to a number of factors, and in a small number of cases very large numbers of variations were gone through (e.g. 80-100), usually with the aim of obtaining some sort of "profile" regarding risk. The most important factors analysed were as follows:

- (i) changes in utilisation rates of vessels, which threw out break-even utilization rates for given freight rates.
- (ii) changes in freight rates/revenues
- (iii) changes in operating costs
- (iv) changes in interest rates
- (v) changes in currency exchange rates
- (vi) market share/market growth rates
- (vii) disposal values

Only variations in the first four of these factors were analysed in almost all companies using sensitivity analysis. The last three, while fairly common, were nothing like as universally found. U.S. companies, for example, had little need to worry about changes in exchange rates, whereas U.K. companies clearly did, since most revenues were dollar denominated. Concerns with market share/market growth were found more often in the liner companies. Concern with disposal values was smaller than might have been expected, though the earlier discussion on philosophy provides some rationale for this.

In considering the application of sensitivity analysis the earlier comments on the form and nature

of the corporate plan need to be borne in mind. It has already been pointed out that in the majority of cases the figures for individual projects would be fed into the corporate figures. This principle follows through into the sensitivity analysis, in that the effect of variations in certain factors was generally determined in relation to the corporate figures, as well as to the individual project figures. Indeed, the effect on corporate figures generally seemed to be given more weight.

In a small number of cases other specific approaches to risk were found,

- (i) the calculation of break-even rates
- (ii) estimates of vessel disposal values at different stages, so as to assess the risks involved if a project were abandoned at different stages of its life
- (iii) the use of different discount rates to compensate for differences in perceived risk
- (iv) the development of different scenarios
- (v) the use of alternative forecasts associated with low or high probability of occurrence
- (vi) the use of a "doomsday" forecast or scenario.

None of the above items were specifically identified in the discussions in more than two companies each. Overall their importance in decision making would thus appear to be low (though this may not be the case in the individual companies concerned). Having said this, there is little doubt that many companies knew their break-even rates in detail. Even if not identified as an explicit part of the analysis, such figures may form a small implicit part. Such a possibility cannot be entirely ruled out. A further factor worth noting is that in practice it was difficult to establish where sensitivity analysis ended and scenario planning started. In a sense it might therefore be argued that (ii), (iv), (v) and (vi) above are variations on a sensitivity analysis/scenario planning theme. What did become clear is that sensitivity analysis and scenario planning were popular principally because they do not require judgements per se to be made of the future. A judgemental stage clearly occurs, but sensitivity analysis and scenario planning help to identify those areas which require most careful consideration and subsequent control. In volatile markets such an approach has particularly clear advantages.

There is no doubt that in practice a considerable amount of time goes into risk assessments for category 1 companies. However, as has been shown, the majority of the time spent relates to corporate wide strategic and financial considerations. There is some danger that the real risk inherent in individual projects may be overlooked, if such projects do not pose serious problems at a corporate level.

6. Financing Aspects of Investment Decisions

6.1 Introduction and Summary of Findings

This section is concerned with the consideration of various aspects of the financing decision. Questions thus covered the relationship between the investment and financing decision, methods of finance, security, and capital structure.

The relationship between the investment and financing decisions was found to be closer than might have been expected from a study of the theory, with concerns covering a number of different areas to do with availability of finance, the use of subsidised finance, the financial packaging of a project, and the effect on the overall financial position. The two aspects were generally kept further apart in larger companies. The main reasons for this appeared to be linked to the relative importance (or unimportance) of project finance on the corporate financial position, and the development of a bureaucracy supporting the finance function.

Methods of finance were found to follow fairly standard patterns, covering corporate loans (in a relatively small number of cases), loans related to new ships, Title XI finance, and bank financing. Leasing was used in some companies, generally under fairly specific circumstances. Associated security was found to be based on mortgages, assignments and guarantees, with variations occurring depending upon circumstances and preferences.

Questioning on capital structure revealed a somewhat more complex picture than is found in the theory. While limits existed in most companies for which clear responses were obtained, virtually no companies set target capital structures. Capital structure was seen as depending upon a variety of factors, including: the effect of capital structure on share price and bond ratings; the ability to finance capital expenditure internally; the relationship between debt service commitments and profitability; debt repayment profiles; the nature of the assets being funded; and economic conditions. Capital structure was seen as being something of a residual, rather than as a positive decision variable.

6.2 Relationship between the Investment and Financing Decisions

Under the MM assumptions finance theory suggests that investment decisions should be considered separately from financing decisions. However, the benefits from tax and subsidised credit

clearly need to be considered in reaching a final decision. Overall the theory in this area is less than universally accepted. In practice considerable confusion also existed in this area, and misunderstandings appeared to exist in a number of companies. For example, as has already been seen, it was found that even in this category, a significant number of companies were found to be discounting future cash flows - including debt service commitments - by a rate which reflected the cost of borrowing. Since such cash flows represent a return on equity, a more appropriate discount rate would appear to be one which reflects the cost of equity - typically for a highly geared project.

Attitudes also differed somewhat, with eight of the 19 companies in this category separating the investment and financing decisions in a fairly clear-cut way, though in four of these companies it was apparent that a fairly clear view was held as to where finance could be obtained, and the conditions likely to be attached to such finance. Seven companies considered the two aspects to be bound together. The remaining four companies all saw links, but opinions and practice ranged from having a general idea on the availability to finance, to calculating ROI on both a 100% equity base and an after debt service base, so as to identify clearly any differences, and to see if differing financial packages could improve the profitability of the project.

In general it appeared that the separation of investment and financing was at its most clear cut in the largest companies, such as the oil major and some conglomerates. In three cases total capital employed was in excess of \$10B. In each of these cases the investment and financing decisions were kept completely separate, so much so that there appeared to be a possibility that relatively cheap forms of asset related finance had been overlooked, with debt being automatically taken out in large corporate chunks. Whether the separation of the investment and financing aspects was the result of a specific policy, or merely the result of the setting up of the large bureaucracy necessary to run a very large enterprise, was far from clear. Certainly in all three companies there were either maritime divisions responsible for initiating shipping projects, or the shipping activities were dealt with in a strong subsidiary company, but with central financing. The only other company in the survey with assets substantially in excess of \$5B also kept the two aspects of the decision separate, but increasingly the Head Office of the parent was expecting the initiating subsidiary to come in with alternative suggestions for finance. For companies with total assets employed of less than \$5B, size did not appear to be an explanatory variable in terms of the separation of investment and financing decisions. Interestingly, all five companies which used the weighted average cost of capital as the discount rate did keep the

investment and financing aspects separate, implying an understanding of, and compliance with, traditional theory in this area.

The companies which were most concerned with the financing aspects and their relation to the investment decision were mainly interested in four factors:

- (i) Availability of finance. Was sufficient finance available to enable the project to be adequately funded?
- (ii) Could the use of subsidised finance enable further gains to be made on the project?
- (iii) Would the availability of different financial packages for various alternative courses of action lead to a different decision being made as to which course of action was most appropriate?
- (iv) Would the undertaking of the project, financed in the assumed proportions, pose any problems for the company, in terms of bond rating, share price, or long term survival?

Given the very high cost associated with investment in shipping, the importance of question (i), relating to availability of finance, is clear. However, in practice yard finance is usually available for new ships, so concerns can be narrowed down to the non-yard financed portion of new ships, or second hand ships. The cost of shipping investments for the oil majors and large conglomerates, relative to existing funds and earnings size and quality, was sufficiently low to enable these companies to effectively ignore questions (i) and (iv). In ignoring these the danger exists that questions (ii) and (iii) may also be missed. For most of the remaining companies the four questions appeared relevant, with very heavy emphasis being placed on questions (i) and (iv) by the companies engaged primarily in the bulk trades, where the size and quality of earnings is lower now than has usually been the case. Earlier comments on the importance of corporate planning clearly indicate the general relevance of question (iv). Questions (ii) and (iii) remain. Benefits exist in the use of subsidised or preferential credit, and such benefits need to be quantified if possible. Existing methods of calculation did not usually provide a clear cut answer, nor did they enable a sensible assessment of the project risk to be made. However, the financial package available clearly did influence the choice of shipbuilder in 12 cases. The financial package available was viewed as an essential ingredient in arriving at the total cost. In the remaining cases the choice of shipbuilder was more heavily influenced by such things as technical expertise, past performance, delivery dates, etc.

6.3 Methods of Finance

By far the most popular methods for financing capital assets were those providing some kind of subsidy or preferential interest rates. For ships these typically consisted of:

- (i) Loans through the Ship Mortgage Finance Corporation on OECD terms
- (ii) Yard credit
- (iii) Title XI Finance in the USA

Fifteen of the 19 category 1 companies had used one or more of the above to finance vessels acquired in the last five years. In almost all of these cases it was apparent that such finance was regarded as the principal source of finance, at least for new ships. Most of the remaining companies were oil majors or conglomerates, where financing was done centrally. In such cases funds were more likely to come from a corporate debt pool – with corporate loans or debentures being raised if necessary – or from company retentions. While it is difficult to be objective about this particular question, the impression gained was that "spin-offs" would cause, or had caused, a significant re-think in the financing methods of newly spun-off shipping corporations, with more reliance on the three categories listed above.

Bank loan finance was also found to be important in financing vessels and other shipping company assets, with particularly important areas being:

- (i) loans for second hand vessels
- (ii) top-ups – finance beyond the amount provided by one of the methods referred to above
- (iii) stretching or re-financing of loans – effectively to extend the financing period of a vessel – often to 12-15 years.

Seven companies explicitly identified examples of the use of bank finance for the above. Five companies made it clear that bank finance might well be used under certain circumstances.

The only other source of finance used with any degree of consistency was leasing. Eleven companies indicated that they had used, or had seriously considered using, leasing. Nevertheless the use of leasing was generally confined to three areas:

- (i) vessels which were backed by a very long term charter
- (ii) vessels where the company could not use the tax allowances itself, but could obtain greater benefit through the leasing company
- (iii) containers.

The vast majority of leases were tax based, since long term charters are currently in short supply. In a small number of cases leases were preferred to loans because longer periods of financing could usually be obtained (typically up to 15 years).

In the remaining companies a considerable resistance to the use of leasing was found. Eight companies stated that they had not, or would not, seriously consider leasing. Reasoning was usually based on two arguments.

- (i) Loss of flexibility, since vessels could not be sold without prohibitive default clauses coming into operation.
- (ii) Capital allowances could be beneficially used somewhere within the corporate group.

New equity (in the form of new issues of capital) was raised by only a small number of companies, none of which were regarded principally as shipping companies. Increases in equity came about almost entirely through retentions.

In negotiating loans for new vessels the companies typically took out the maximum possible amount. This was found to be true in 14 of the 19 cases, most of the exceptions again being the largest conglomerates or oil majors. In a few cases it was made clear that exceptions to this might occur if cash flow patterns were favourable, or if the currency of the loan was not favourable. In several companies maximum loans were only sought if they were associated with lower interest rates or similar subsidy. In one such case while asset based subsidised loans were taken, debt management was clearly done on a corporate basis, and more expensive loans were frequently retired from the proceeds of the subsidised loans. Undoubtedly this went on to a lesser degree in other companies, but in only one case was such a policy clearly defined. The proportion of the cost of new vessels typically financed from loan was 80-100%, sometimes with a combination of yard credit and bank loans being taken out.

For second hand vessels the position was rather less clear. Only about half of the companies in this category had made major acquisitions of second hand tonnage. Of these only three typically sought the maximum loans, and, as has been seen in the chapter on banks, the maximum amount usually depended on the type and age of the vessel. Finance for second hand vessels was almost entirely bank finance, with loans being typically for 50-70% of cost over periods of 5-7 years.

Loan periods did not appear to be a major problem for companies in this category, since banks typically were prepared to top up and "stretch" yard credit, so that typical loan periods on new ships were 10-12 years. Also, almost all companies were able to re-finance borrowings fairly easily, thus

further extending the repayment period if necessary.

6.4 Security

Security needed for yard credit was typically a first mortgage on the vessel. Security required for bank loans usually consisted of one or more of the following:

- (i) first mortgage on the vessel
- (ii) assignment of earnings
- (iii) second mortgage on the vessel
- (iv) parent company guarantees

The first of these was given in almost all cases except the oil majors and large conglomerates. The second was also fairly common. Second mortgages were much less common, being associated with more risky projects, or those where the loan proportion was very high. Parent company guarantees were avoided by some companies, while others saw no problems with them. In the final analysis the security given is the result of a process of negotiation, which reflects corporate and bank attitudes as well as prevailing market conditions.

The use of detailed security measures such as those outlined above is somewhat surprising, at least in the context of category 1 companies, since one might expect lending to be balance sheet oriented, rather than asset oriented, for such companies. Two possible reasons for this were identified. One was that if certain banks required security of this type, every other bank would require it, simply to remain *"pari passu"* with other banks. In effect, the banks need to ensure that other lenders are not "preferred" creditors in the event of a winding up. The other reason why additional security may be given is to obtain slight reductions in the rate of interest charged. One company expressed its views in the following way:

"Banks have traditionally required for their shipping loans a first preferred mortgage on the vessel, a parent company guarantee, and assignment of monies under a charter, which we are very happy to give them. As a public company some banks have enough comfort in our balance sheet that they would make us a straight balance sheet loan, just with a parent company guarantee. But we would still give them the mortgage and the assignment because the pricing is a little better if they have assets as collateral, and we have no hesitation in giving it to them."

Overall, security does not appear to be a major problem for category 1 companies.

6.5 Capital Structure

A number of detailed questions were asked in this area, covering total debt limitations, capital structure targets, the effect of different capital structures on share price, and related issues. In a number of cases clear answers were not obtained to these questions, principally because interviews took place in subsidiary companies, while decisions on capital structure were made centrally. In spite of this reduction in the effective sample, the answers provided did suggest a clear concern with the level of debt, although generally for reasons of financial prudence and flexibility, rather than for any reasons to do with share price per se. Of course financial prudence and flexibility may well affect share price, but the emphasis was very much on the former rather than the latter.

The first question asked in this section was whether the company set a limit to the total amount of debt taken up. Clear responses were obtained from 13 companies. Of these 11 stated that there was a limit, with only 2 companies stating that there was no effective limit. These two companies qualified their statements in subsequent discussions. In one case it was made clear that the company was operating at a debt level well below the levels it had become accustomed to in earlier years, so a substantial increase in debt was not seen as posing any particular problems. Debt levels for this particular company had been amongst the highest of the category 1 companies. In the second company concerns were not with debt limits per se, but with the company's ability to service debt. Clearly the two are related, but the emphasis was not on the level of debt as such, but on the ability to service debt. Of the six companies for which clear answers were not obtained, five had overall levels of debt which were amongst the lowest of all the companies in the survey.

Several of the 11 companies which stated that there was a limit to the debt taken up referred to specific limitations, such as those included in the following statements.

"Years ago we had a house limit of not having debt more than twice equity. Right now we have a house limit that we would be closer to 1:1"

"1:1 is a level beyond which we wouldn't wish to go."

Other illustrative quotations in this area are included in later sections. In other cases no specific figure was given, often because actual debt-equity ratios were so far within any notional or conceivable limit that concerns with overall levels were not particularly great.

The next area of questioning related to target capital structures. In a small number of cases published comments were found which might be taken to imply that a target capital structure existed.

Two such examples are given below:

"All things considered, a debt to capital ratio of about 50% is appropriate for Moore McCormack, and the actions taken, plus an improvement in the economy, should move us back towards that level." (M1 Annual Report 1982-P4)

"At December 31st 1982 and 1981, the sum of long-term debt and redeemable preferred stocks as a percentage of total capital was 33% and 28% respectively, and has averaged 31% over the last four years. The company believes that these debt-to-equity ratios reflect the maintenance of an adequate capitalization position and that it has the ability to raise additional funds in the long term debt market without impairing present credit ratings." (Reynolds Annual Report 1982-P37)

In the discussions a specific question was asked in all cases, as to whether the company worked towards the achievement of a particular long run capital structure. Of the 19 companies in this category, 14 provided clear answers to this question. None of these 14 companies had target capital structures as such. In one of the five companies where a clear answer to the question could not be obtained, because the interview was at a divisional level, the following comments were made:

"I am not aware of any overall corporate target for debt, or any debt equity ratio, other than I know that our Finance and Treasury Department are conscious of that as it relates to the corporate rating; Standard and Poor's, Duns or whatever. We do not concern ourselves with it, but when there is a corporate concern we hear about it."

While not conclusive, such a comment suggests that no target capital structure existed for this company.

Clearly, therefore, target capital structures were not seen as important for category 1 companies. However, the fact that limits to the amount of debt were almost universally acknowledged, suggests that some kind of capital structure related concerns exist. In fact discussions in this area were wide ranging, and a number of variables were identified as being important contributors to the final capital structure. The most important of these variables were:

- (i) the perceived effect of capital structure, and changes therein, on share price
- (ii) the relationship between new investment opportunities and the availability of internal funds
- (iii) the perceived effect of capital structure on bond ratings and the ability to finance further investments
- (iv) the relationship between profitability and debt service requirements, with interest cover often being used as an imperfect surrogate
- (v) the repayment profile of debt, and the ability to re-finance debt;
- (vi) the nature of the assets being funded by debt

(vii) market fashion with regard to gearing, and the effect of changing economic conditions on desirable ratios.

Consideration of all these factors typically means that the actual gearing level is something of a residual, representing nothing more than a balancing of the above factors. The relative importance of each of these is difficult to assess since both the shipping markets and the economics of the western world have been going through rather traumatic times. Nevertheless some broad generalisations can be made.

Capital Structure and Share Price

With regard to the first of the above, a fairly firm conclusion can be reached. A specific question was asked as to whether companies, in considering the level of debt, attempted to assess the impact of changes therein on the value of ordinary shares, either in general terms, or in a quantified way. Fourteen usable responses were obtained. None of the respondents made any formal quantified attempt to relate share price and capital structure. Three companies gave general consideration to this relationship.

The Relationship between capital expenditure needs and internal funds

A selection of debt/equity ratios is given in table 11. The ratios calculated are based broadly on the ratio of long term debt divided by long term debt plus equity, expressed as a percentage. Inevitably some inconsistencies exist between the figures for certain companies. However, while different treatment of certain peripheral items may alter the precise percentage slightly, the figures in table 11 are seen as providing a good indication of the range and level of gearing ratios. The table indicates considerable variation in practice between companies, and (though to a much lesser degree) over time. The companies with the lowest ratios were the oil majors and the large conglomerates, which typically had very high internal financing ratios. Examination of the accounts (and related information) of the four largest corporations in this survey yielded the information shown in table 12.

Company	1978	1979	1980	1981	1982
Alcoa	35%	29%	26%	31%	36%
Exxon	16%	16%	15%	16%	14%
Moore McCormack	44%	50%	52%	53%	57%
Ogden	48%	47%	51%	57%	54%
OSG	54%	54%	54%	51%	49%
Sea Containers	74%	75%	69%	65%	58%
Reynolds	23%	24%	24%	21%	24%
Texaco	28%	27%	22%	19%	16%
Booker McConnell	14%	11%	13%	6%	5%
Burmah	45%	41%	41%	42%	39%
Ocean			41%	36%	36%
P & O	42%	35%	31%	27%	34%
Powell Duffryn	10%	13%	22%	23%	26%
Trafalgar House				31%	23%
Furness Withy			45%	50%	47%

Table 11 Gearing ratios for category 1 companies.

Company	Capital Expenditure	Funds from operations	Gearing range
Alcoa 1978 - 1983 (mid)	\$2754 m	\$3028 m	26 - 39%
Texaco 1978 - 1982	\$10693 m	\$16245 m	15 - 28%
Exxon 1980 - 1982	\$24507 m	>\$30000 m	14 - 16%
Reynolds 1980 - 1982	\$2497 m	\$3976 m	21 - 24%

Table 12 Relationship between internal funds generation and capital expenditure - largest companies

This table identifies the capital expenditure of these companies over a number of years just prior to the interviews, together with the funds available from normal operations (broadly net profit before tax - adjusted for depreciation). The aim was to establish the extent to which internal funds were being generated, which might be used to fund further investment.

Clearly figures such as these do not necessarily mean that capital expenditure can be financed entirely internally, since other commitments, such as debt repayments, may well need to be funded.

Nevertheless, relationships of this type have a potentially very significant effect on capital structure over time. Certainly Exxon, in its 1982 Annual report, made clear its expectations in the area.

"It is anticipated that the company will continue to finance its capital and exploratory expenses principally with internally generated funds. However, some external financing may be employed by the company subject to market conditions."
(P25)

A brief consideration of the Texaco accounts in recent years, and its debt-equity ratios make it clear that it has been in the same position for most recent years.

In an attempt to follow this idea up in more detail, the equivalent figures for as many of the other companies in this category as possible were calculated, with the results as set out in table 13. This information, and that included in table 12, was then combined with that of table 11 on debt equity ratios, with ratios being calculated for the relationship between funds from operations and capital expenditure (a kind of self-financing ratio). Companies were then ranked according to size of the self-financing ratio and the debt equity ratio, and the results are as set out in table 14. The ratios for Ocean Fleets were excluded because of insufficient data.

The rankings are undoubtedly interesting, with only two companies having one of the rankings different to the other by more than three places. One of these was Powell Duffryn, which had a consistently rising debt/equity ratio over the six years to 1982. In fact the increase in debt (from £10.7M in 1978 to almost £40M in 1982) appears to be closely linked to a positive drive for expansion, and non-current assets increased over the same period from £66.7M to £122M. By 1985 the equivalent figures were £73M and £153M respectively, with the self financing ratio for 1983 - 85 being .85 and the gearing ratio at the end of 1985 being approximately 36%. The other company with rather different rankings was Trafalgar House, where earnings for the period in question (1981 and 1982) were significantly higher than in previous years, suggesting an unusually high self-financing ratio, rather than one which was sustainable in the long term. In fact, for the period 1983 - 85 the self financing ratio dropped to an average of 1.06 (.88 for 1984 - 85), while the gearing ratio was 31% at the end of 1985. Both of these figures tend to support the above view, namely that the self financing ratios shown for Trafalgar House in table 14 were unusually high.

Company /period	Capital expenditure	Funds from operations	Notes
Booker McConnell (1979 - 1982)	£82.8m *	£111.6m	* includes goodwill & investments
Burmah (1980 -1981)	£139.4m *	£150m	* includes additions to investments, shipping, advances
Furness Withy (1980 - 1982)	£70.9m *	£46.2m	* includes investments
Moore McCormack (1980 - 1982)	\$356.3m *	\$220m	* net additions to capital assets
Ocean (1981)	£12.1m	£34m *	* excludes £22.5m profit on exchange adjustments
Ogden (1980 - 1982)	\$593m *	\$443m	* includes goodwill on purchase of subsidiaries and investments in other companies
OSG (1980 -1982)	\$412m *	\$341m **	* includes net investment in subsidiaries and additions to net inv. in finance leases ** WC from operations
P & O (1980 -1982)	£214m	£182.7m	
Powell Duffryn (1980 - 1982)	£77m *	£57m	* includes purchase of investments, goodwill + interest in assoc. comps.
SeaCo (1980 -1982)	\$274.7m *	\$203.7m	* additions to fixed assets, net of disposals
Trafalgar House (1981 - 1982)	£103.86m *	£178.7m	* includes investmts

Table 13 Relationship between funds from operations and capital expenditure - category 1 companies

Company	Ratio of funds from operations to capital expenditure		Average debt/equity ratio for same period	
	ratio	ranking	ratio	ranking
Trafalgar House	1.72	1	27%	6
Reynolds	1.59	2	23%	4
Texaco	1.52	3	18% or 22% with capital leases	3
Booker McConnell	1.35	4	10%	1
Exxon	1.22	5	15%	2
Alcoa	1.10	6	31%	8
Burmah	1.07	7	41%	9
P & O	.85	8	27%	6
OSG	.83	9	51%	11
Ogden	.75	10	54%	12
Powell Duffryn	.74	11	24%	5
SeaCo	.74	12	64%	14
Furness Withy	.65	13	47%	10
Moore McCormack	.62	14	54%	12

Table 14 Relationship between internal financing ratios and gearing levels - category 1 companies

Overall, the above figures suggest a close link between the generation of internal funds and capital structure. In some senses this might be viewed as something of a tautology, since having internal funds available will almost inevitably reduce or eliminate the need to borrow. However, traditional theory suggests that such a policy is not optimal in terms of shareholder wealth, and that the advantages of, and benefits from, borrowing, ought to be carefully evaluated. The implication of this section is that this careful evaluation does not occur in the way implied by the theory, but that debt will be incurred where needed to take what appear to be good opportunities. If high internal funds are available the need for new debt will be much reduced, if not eliminated. High internal funds are likely to be associated with high quality earnings from well established businesses. In turn this suggests that size and the degree of diversification are likely to be important contributory factors to internal funding and hence capital structure. The oil majors and the well diversified conglomerates are thus likely to be

associated with the lowest gearing ratios, while those companies with a high proportion of shipping activities are likely to be associated with higher gearing levels.

Nevertheless, it must be recognised that internal funds are only one aspect of the self financing ratio. The other is capital expenditure, and this is basically likely to depend upon the need for replacement expenditure and, probably more significantly, on expenditure on new business opportunities. Even high quality earnings may still be insufficient to fund ambitious expansion or acquisition programmes. The figures for Powell Duffryn over the period 1978 - 1985 have already been noted, with a growth in the gearing ratio from 10% to 36%. This increase occurred in spite of fairly high quality earnings (between 12 and 15% return on assets over the period), simply because of the significant expansion programme which had been undertaken.

The effect of capital structure on bond ratings

In a number of cases references were made to a concern with bond ratings and the ability to finance further investments. For example:

"Basically they've always tried to have a 40% debt limit. ... there's no rule on that, but the financial people do not like to go above that, for purposes of bond ratings and debt ratings. That is the real reason."

However, given that there were very few cases where debt/equity ratios changed dramatically over time, it seems unlikely that such concerns were particularly important taking one year at a time. This is not to say that they are not important from an overall strategic viewpoint.

The relationship between profitability and debt service requirements

The earlier section on appraisal techniques made clear the importance attached to debt service ability. In practice, the examination of the potential relationship between profitability and debt service requirements was seen as more important than capital structure per se. Indeed one company expressed its views very clearly:

"As long as we can cover our debt service ... they (lenders) do not care what the capital structure is ..."

Few companies seemed prepared to go quite this far, but the emphasis on debt service ability was clear. Interest cover was often used as an imperfect surrogate for the relationship between profitability and debt service ability, and several companies made it clear that the prime limitations on debt was related to ideas on interest coverage.

The current volatility of the shipping industry caused other companies to be more concerned with

the ability to service debt in total, i.e. interest and capital repayments. Maximum debt levels were thus affected by market volatility, interest rates and related factors, as indicated by the following observation.

"We probably have a (debt/equity) ratio of a little better than 3/2 ... I would like to see it reduced a little ... 1/1 is a nice figure. I don't think I'm ever likely to see it, but I would like to get down a little under the 3/2 level, because debt service being what it is makes it very difficult to weather the valleys of this business ... We know what our debt commitments are, but we don't know what our revenues are going to be ... We can sit down here and tell you all our estimates of cost, but ... I can't get our chartering people to give me a revenue estimate from now until December ... It (debt) becomes very hard to support. We sat here a year and a half /two years ago and paid 22% interest."

It needs to be recognised that in shipping the size of typical debt service commitments is such that the very survival of the business may be threatened if profitability falls too low. Given the current state of the shipping markets, opportunities for substantial, or even normal profits for the industry are not likely to be great, so companies may well be forced to rely entirely on cash flows from current operations to service existing debt and to provide adequate funds for new investments. (Though this is less of a problem for the acquisition of new vessels – given current support through yard credit.)

The importance of this particular aspect of the capital structure debate varies considerably within category 1. Concerns were found to be greatest in those companies most involved in shipping. For the diversified conglomerate or oil major the quality of earnings was typically much higher than those relating to shipping. (The steady move of many category 1 companies out of shipping activities has already been noted.) Even within shipping most category 1 companies had concentrated on the high quality/specialist end of the business, where the volatility was less marked. Those companies most exposed to the bulk trades were most concerned with this particular aspect. Since the interviews took place the liner industry has become less stable, and it seems likely that this aspect of the capital structure debate will become an important consideration for liner companies as well.

The Repayment Profile of Debt

Linked to both of the above points is the question of the profile of debt repayment and the ability to re-finance debt. Examples of debt repayment profiles are shown in table 15.

The table indicates considerable variation in the debt repayment profiles of the companies, with the companies most involved in shipping activities typically having less favourable profiles (i.e. larger short and medium term commitments) than the oil majors and conglomerates. Typically for these larger companies, the profile of debt repayment was long and well spread. In any debate on capital

Company & Source	Long term debt repayable - years ahead						Notes
	1	2	3	4	5	5+	
Exxon (1982 Annual Report)	9.3%	7.4%	6.5%	6.1%	12%	58.7%	23% 15 years + 35% 5 years +
Texaco (1982 Annual Report)	12.8%	2.9%	2.8%	8.4%	3.8%	69.3%	Based on LT debt without leases Approx. 50% 15 years +
Reynolds (1982 Annual Report)	3.5%	8.6%	13.4%	8%	2.3%	64.2%	Approx 25% due 15+ years or sinking fund over 15 years
Burmah (1981 Annual Report)	← 34.3% →		← 29.6% →			36.1%	Approx 20% 5-10 years 16% 10+
P & O (1981 Annual Report)	23.3%	10.6%	← 45.5% →			20.6%	Ex overdrafts 8.5% for 9+
Moore McCormack (1982 Annual Report)	1.7%	5.1%	7.6%	11.1%	11.1%	63.4%	Estimate approx 20% 10+
OSG (1982 Annual Report)	6%	8.1%	9.7%	21.9%	10.8%	43.5%	Estimate approx 25% 10+
Ogden (1982 Annual Report)	10.1%	13.1%	27.9%	5.1%	5.7%	38.1%	Estimate > 25% 10 years +
SeaCo (1982 Annual Report)	19.8%	16.8%	15.4%	12.9%	8.5%	26.6%	Very small amounts 10+
Ocean (1981 Annual Report)	11%	14%	← 32% →			43%	Very small amounts 10+

Table 15 Debt repayment profiles - category 1 companies

structure these differences need to be recognised and considered. A particularly important aspect of this, linked to ideas from earlier sections, relates to the balance between long and short term debt, and its effect on working capital. One company expressed its concerns in the following way:

"If you have too much debt in a company the current proportion of long term debt may become so overwhelming that you do not have any working capital, so we have to be concerned about that."

Concerns of this type were almost universally found, but were typically dealt with as part of the planning system, as has already been indicated.

In passing, it is worth noting that a small number of companies appeared to place great emphasis on re-financing their assets regularly. This was not typical for category 1 companies (although more common for categories 2 and 3), but, where found it was of undoubted importance, as can be seen from the following quotation from one interview:

"We always refinance them (vessels). So in effect we end up with 15 year debt on a 15 year ship, because we re-finance them every 5 years, assuming the market value supports that. That is one of the problems, or apparent problems, the company has. If you look at its debt maturity schedule compared with its internal cash flow, coverage is not good, and that is because the average life of debt is short, because it is bank debt. ... The problem with looking at it that way, what it ignores, is the company's ability to re-finance the stuff, and its history of re-financing ... The stuff is constantly rolled over. So there the only risk or the only issue is the company's ability to continue to do that, which is going to be a function of its profitability and all the rest of it."

The Nature of the Assets being Funded

A point made on a number of occasions was that gearing levels were also related to the type of asset being financed from debt. One company, in defending its relatively high gearing, expressed itself as follows:

"At times there is a failure to recognise that property and shipping are highly geared industries, and they are lost within the overall results of (the company). Therefore our borrowings are more likely to be covered by substantial asset backing than many other companies which may have borrowed heavily ... (You) have to look at the borrowing in relation to the asset backing, and decide whether we are highly geared, and the type of asset backing that there is there."

Generally property and vessels were the two main types of assets put forward as supportive of high gearing, with the presumption being made that such assets can always be sold at a price which is likely to cover any outstanding debt. In relatively stable or expanding markets this is probably true. The current volatility of the shipping markets make such an assumption less valid than was once the case. Nevertheless the arguments remain, even if the security is less than it used to be. This ought to lead to lower overall debt-equity ratios than existed several years ago, but levels of gearing in shipping are still likely to be higher than that associated with many other assets. If the security referred to above is coupled with easy access to finance for new vessels, as occurs in practice, it should be clear that the opportunity for higher gearing in shipping is there, even if managers conservatism sometimes keeps it lower than is possible. One company specifically referred to the view of analysts that, given the nature of the assets being funded, gearing was too low.

"Some analysts have offered the opinion that perhaps we are too conservative, and if we could leverage ourselves up a little higher it would create more earnings for the same amount of equity, and therefore, benefit the shareholders. We do not share that opinion."

In passing, it perhaps needs to be pointed out that financing institutions probably now require rather more in the way of cross-default cover than they used to, so as to compensate for the increased volatility on the sale and purchase markets, which increases the risk of inadequate security on an

individual asset.

Apart from providing the opportunity for greater borrowing, the acquisition of assets such as ships, for a highly capital intensive industry, are also likely to be associated with a need to borrow. The capital costs of assets of this type are now so high that few companies could actually afford to play for them without borrowing. If greater need and greater opportunity co-exist, the chances of higher levels of gearing are increased substantially.

Market Fashion and Changing Economic Conditions

In concluding this section on influences on capital structure, it is important to recognise that many companies were conscious of market fashion and market conditions as an influence on the gearing ratio. Examples of the type of comments made are given below:

"If you start to get the debt exceeding the shareholders funds substantially, then people start to worry. We are very conscious of market reaction to gearing. At one stage it was very fashionable, but fashions seem to change here. We went through a period when it was considered that you were not doing your job properly if you were not borrowing to the maximum and using those funds profitably and investing in new businesses, expanding. That was before the bubble burst, and people today take a much more conservative view, and rightly so."

"One of the problems with it is that the perception of the market anyway is going to totally change, depending upon not just how the Balance Sheet looks, but depending upon what the P and L looks like, because you can have one debt/equity mix in a certain economic climate where you are making good profits, and the same debt/equity ratio under different market conditions will give a completely different picture of the risk perceived by the market."

The first of these quotations indicates that a view exists that market fashion does change over time.

The second relates market conditions to expected profitability, with a consequent knock-on effect as far as an appropriate (or maximum) gearing level is concerned. Other examples were found in which considerable attention was paid to the effect of changes in some particular facet of market conditions, such as interest rates, on attitudes towards gearing.

Exactly which is the more important is not clear. It may be the case that market fashion is entirely determined by market and/or economic conditions, or it may be that views on capital structure would change over time even if economic conditions stayed broadly the same. Intuitively one would expect changes in market conditions to lead changes in fashion or expected profitability rather than the other way around. Be that as it may, what is clear is that a substantial number of companies consider that the capital structure needs to reflect changes in the factors identified above, which in turn implies that preferred or maximum debt/equity ratios may well change over time.

Miscellaneous points on Capital Structure

A number of miscellaneous points on capital structure were raised in the course of the discussions. Most of the points raised related to a small number of companies. Issues raised covered the following points:

- (i) Growth. A small number of companies had funded growth/expansion principally through the raising of debt. Reference has already been made to the expansion of Powell Duffryn, resulting in an increase in the debt-equity ratio from 7% in 1977 to 26% in 1982. A more dramatic increase in debt-equity ratios was associated with the expansion of United States Lines in 1983-85.
- (ii) Spin-offs. A number of spin-offs occurred with companies in the survey. Inevitably this is likely to lead to some re-adjustment of gearing levels over time.

Conclusion on capital structure

A number of different influences on capital structure exist. Precisely which are the most important at any one time is unclear, although share price considerations do not appear to be very important. A point of considerable interest, however, is the fact that while a certain amount of fluctuation and variation in gearing ratios was found, both within companies and over time, no major changes were found to have occurred rapidly. For example, the substantial change in the gearing ratio for Powell Duffryn between 1978 and 1985 occurred gradually, with sound documented warnings and support in the Annual Reports. Similarly, the increased gearing of Moore McCormack, from 44% to 57% over the same period, was also associated with a significant expansion programme. A gradual policy was used in the company, and care was taken to make clear the limits of the expansion programme and the associated capital structure (50% being identified as an appropriate level). These examples, when coupled with the findings on limits to the amount of debt which companies are prepared to take up, suggest that category 1 companies are concerned to remain within certain limits, but that within these limits fluctuations were acceptable, depending upon the amount of internal funding and the availability of good opportunities. The ideas on limits are most likely to be influenced by concerns to do with share price, bond ratings, debt service ability, the nature of the assets, and economic conditions. However, since most category 1 companies appear to be operating within their perceived (but probably hypothetical) limits, the main determinants of capital structure in the short and medium term are likely to be internal funding and the availability of opportunities. As a matter of good practice, probably related to share and bond price (or other re-financing issues), most companies paid considerable

attention to explaining any actions which changed the gearing ratios to any noticable extent.

Chapter 9

Category 2 Companies

Smaller Public Companies and Large Private Companies

1. Aims and Objectives

1.1 Introduction and overall findings on objectives

Much of traditional finance theory appears to have been written with public quoted companies in mind. Since ideas of share price maximisation are arguably of less relevance to private companies the application of the theory to private companies appears more dubious. In the course of the discussions held with the 18 companies in this category an attempt was thus made to ascertain what objectives actually existed, explicitly or implicitly.

As with the category 1 companies, considerable discussion took place on objectives, and an attempt was made to draw out the objectives underlying the various philosophies, strategies, and subsequent activities of the companies in this category. In all cases the discussions on objectives were guided through elements to do with share price or wealth maximisation, profitability, dividends and growth. In spite of this, very little consistency of approach was found, where any clearly discernible objectives existed.

The first general point that needs to be made is that no company made any reference to any formally written down objectives, and published information (in the form of annual reports and other company publicity information) where available, did not include any specific references to objectives as such. Having said that, it needs to be recognised that companies in this category were much more reluctant to hand out accounts and other information, and published information of possible use in this area was only obtained in nine of the eighteen cases. Even where such information was available the

"discussion" parts of the documents were rather thin, certainly by comparison with those of public companies.

The second general point, is that the overall results of this section on objectives were no more satisfactory for category 2 than they had been for category 1. In fact only two conclusions could clearly be drawn from the discussions.

- (i) Share price maximisation was not an appropriate objective, and had no bearing on decisions in any of the companies in this category.
- (ii) Decisions were generally being taken without reference to, or apparent need for, a specific clear cut objective/s.

Very few cases were found in which clear cut objectives existed. Nevertheless, in the discussions a certain amount of consistency was found in the areas which provoked most comment or interest. Whether these ideas could be regarded as implicit objectives, or merely as possible influences on decision making, is unclear. Responses fell broadly into six areas, namely:

- (i) share price maximisation (and its extension into wealth maximisation)
- (ii) objectives to do with being a public company (only applies to five of the 18 companies)
- (iii) profit maximisation (and related profitability objectives)
- (iv) comments regarding dividends
- (v) personal or family related objectives
- (vi) a variety of other objectives or criteria

These areas are discussed more fully in the sections which follow. The first two areas tended to overlap to some extent, and they are thus dealt with together in the next section.

1.2 Share Price Maximisation/Public Company Responsibilities

Of the 18 companies in this category, five were actually public companies quoted on the Stock Exchange, so the question of objectives to do with share price was considered relevant. In fact it was decided that, as with the category 1 companies, a question should be asked in all companies about the extent to which share price maximisation was seen as an appropriate objective. The reasons for this were threefold.

- (i) The responses to this question in the category 1 companies had suggested that in fact objectives

were far more complex than might have been expected. A similar question was needed in this category to ascertain the extent to which commonality of objectives existed between categories, and the extent to which significantly different objectives existed.

- (ii) A question of this type would open up concerns about wealth maximisation or related ideas, which might be considered relevant extensions of share price maximisation.
- (iii) Responses would enable the direct relevance of this particular objective to be assessed for companies in this category.

Not altogether surprisingly, of the eighteen companies in this category, thirteen explicitly rejected share price maximisation as an objective. Of the five remaining there is little doubt that share price maximisation was implicitly rejected, with a number of alternative objectives or "concerns" being put forward. These are dealt with in later sections. Of the five public companies in this category four explicitly rejected share price maximisation as an objective, while the fifth implicitly rejected it.

As with category I companies, the public companies did generally express some concerns about certain "shareholder responsibilities", though these concerns were found in varying degrees. One of these companies argued that its objectives were far more complex than share price maximisation, and that far more had to be taken into account. Further discussions along these lines made it clear that personnel aspects in decision making were given considerable importance in this particular company. The net effect of all of this was translated into an objective:

"to have a well managed company, with a growing level of profits from year to year - but after recognising the cyclical nature of shipping."

This company was thus paying less attention to its results on a year by year basis. Interestingly, this company, which had an active investor relations programme, did have doubts as to whether its institutional investors shared this view. It was felt that these investors might well be more concerned about "quality" of earnings. The investor relations programme was seen as a means of making shareholders more aware of the conditions within which the company was operating, and thus reducing misunderstandings about company performance. The second public company argued that in fact decisions were made by a management team more concerned with staying in business than with stock price. This company did not have an active investor relations programme, but this might change if the company became more profitable, and concerns with survival thus became less pressing. The third public company expressed cynicism over the efficiency of the capital markets, and the irrelevance of

share price maximisation for companies with relatively limited share trading. This view was expressed as follows:

"At the moment there are very few transactions, and our shares have moved up simply because the market has moved up. There is no justification for saying that our shares should be any better than they were six months ago, and in fact we keep in very close touch with it. We had a buyer for a 100 shares in the market two weeks ago, and it pushed the price up 9p. Now that is quite ridiculous. I suspect, and I think most people do, ... that the people who make most of the money have to be the jobbers, who play with prices."

The fourth of the public companies had implicit objectives to do with profitability, and the earning of a reasonable rate of return. The objectives of the fifth public company were complicated by part government ownership, with an overriding objective being the maintenance of a strategic fleet. In this company subsequent discussions on philosophy and strategy also suggested implicit profitability objectives as well.

In general, it appears that shareholders concerns were less pressing in category 2 than they were in category 1. This is mainly attributable to the nature of the ownership, with shares typically being fairly closely held, and management thus being in closer contact with owners.

1.3 Objectives to do with Profitability

Seven of the eighteen companies explicitly identified some kind of profitability objective in the discussions. These objectives tended to be related to either a general search for profitability (three cases), or the achievement of an acceptable return on investment (four cases).

The first of these companies, Lyle Shipping Co. plc., included the following statement in their 1981 Annual Report.

"Our broad strategy is to secure optimum returns over the years on our shareholders funds, through the worldwide deployment of our trading resources."
(P6)

A second company, although having an implicit aim that the company would try to do the most profitable business it could, in fact translated this into profitability targets for new projects. The view was then expressed that the company should be looking for a "reasonable" rate of return on investment. "Reasonable" was considered to be 15-20%, although returns of this size were not currently being achieved. Two other companies also had objectives related to return on investment. In one case, while clear criteria were not specifically identified in terms of ROI, the necessity for projects to

compete on profitability terms with each other, across unrelated divisions, meant that an implicit ROI criterion existed. In the other case the ROI objective was spelt out in detail, as follows:

"Our objective, of course, is to make a fair return, ... 15-20% return on investment is not unreasonable in the shipping business. That's what everybody thinks of in every other business, and we should be no different. But if we end up with a 10% return we would be delighted."

The other three companies which specifically identified profitability objectives tended to be rather less precise in terms of required or expected profits. In two cases current market conditions were causing a significant reduction in profitable opportunities, and the objective was really one of making a profit, as opposed to a loss, to ensure survival. In both cases reasonable profit levels would be hoped for in the medium and long term, but decisions were being made on the basis of much shorter time scales. The third company was concerned with the maintenance of a freight rate level that gave acceptable profitability.

The fact that only seven of the companies explicitly identified profitability objectives should not be taken to mean that profitability was not important in the other companies. In fact in most cases profitability objectives were implicit in the discussions. For example, in one case a decision had been made to sell the company simply because the returns currently being achieved could not justify the amount invested in it. Such a decision changes the short term objectives, but implicitly recognises a long term objective related to return on investment.

1.4 Dividends

Very few companies in this category expressed major concerns over dividends, and certainly no objectives were couched in terms of dividends. In a few cases dividends were seen as something of a constraint, notably in three of the five public companies. For example, Lyle Shipping Co. plc., in a document supporting a rights issue (13/5/81) asserted that:

"The amount of ordinary dividend which the Directors will declare in respect of the year ending 31st December 1981, will depend on the level of profits achieved by the company. In the absence of unforeseen circumstances the directors expect that the total dividend per ordinary share on the enlarged Issued Ordinary Share Capital will not be less than 9.5p net for that year." (P4)

In 1981 dividends paid were actually 10p per share. In 1982 a substantial loss was made, and dividends were reduced to 7.5p. Clearly in this company dividends are likely to be reduced in times of adversity.

However, the impression given in the above statement is that dividend maintenance would be given a fairly high priority. This is reinforced by the actual dividend trends for Lyle, which were as shown in table 16.

A similar approach was found with London & Overseas Freighters (LOF), which also reported a substantial loss in 1982.

"In view of this result and the uncertain outlook your Board has decided with regret that it would be inappropriate to recommend the payment of a dividend this year. The Board has not lightly taken this decision and fully intends to restore the dividend to an acceptable level as soon as profitable trading permits." (LOF Annual Report 1982 P4)

Clearly the desire for dividends exists, but adverse results override this desire.

Reardon Smith Line plc., in the same year

"... referred to the proposed dividend and, whilst trading results and present conditions do not warrant the payment of a dividend, nevertheless, taking into consideration a fairly substantial capital credit in the financial statements and the fact that stockholders have given an appreciated support during the past few years, during which period, with the exception of the last year, only token dividends were paid, it is felt that a modest dividend can now be justified in respect of the year under review ... Unless there is a dramatic improvement in trading conditions it is unlikely that this dividend can be maintained for the current year." (1982 Annual Report P4)

EPS/Dividends per share trends for Lyle, LOF and Reardon Smith are shown in table 16. In the remaining two public companies in this category, no cash dividends had been paid in recent years.

Earnings per share/ Dividends per share										
Company	1978		1979		1980		1981		1982	
	EPS	DPS	EPS	DPS	EPS	DPS	EPS	DPS	EPS	DPS
Lyle	(9.6)	5.5	53	7.5	98.6	9.5	75.9	10.0	(51.8)	7.5
LOF	(7.1)	-	(3.4)	0.8	6.8	1.5	(2.1)	1.5	(4.2)	-
Reardon Smith	(152)	0.15	(25)	0.14	4	0.14	17	2.5	(2)	1.25

Table 16 Dividend/earnings per share relationship - category 2 public companies

Of the private companies in the sample only three made any specific reference to dividends in their discussion of objectives. In one of these the reference was simply to assert that dividends were not a consideration in terms of objectives or decisions, since none were paid. In the second such company similar comments were made, with further emphasis being placed on the importance of retentions as a source of funds. In the third, dividends were related to the tax position of private

companies, and were thus effectively relegated to a quite small factor in decision making. The following observation was made:

"There is actually a point here that comes back to the whole concept of private companies ... the dividend is probably much lower than it otherwise would be, to keep the value of the shares down, to keep the ... capital transfer tax under control, so that when an elderly shareholder dies there is enough money around to pick his shares up, and, as you probably know, the typical method of valuing shares is related to the dividend, so that dividends are kept to the absolute minimum."

It is interesting to note that concerns with dividends appeared to be greater in the public companies than the private companies. This presumably relates to the idea of certain responsibilities of public companies referred to earlier. However, the smaller public companies included in category 2 were clearly less able to obtain high quality earnings than those of category 1, and dividends were thus more likely to be affected by adverse trading results than for the larger companies. Indeed, as will become apparent later, the smaller companies were generally unable to obtain the same quality of earnings overall (through such things as diversification), and were thus likely to have more variability in total earnings and consequently dividends.

1.5 Family/Personal Objectives

While there is little doubt that certain individuals were clearly influential in the decisions of the large publicly quoted companies, there were very few cases of large corporations being dominated by individuals or families. This is far from the case with the second category of companies. At least seven of the 18 companies in this category were under the control of individuals or families, while a further nine were very strongly influenced by individuals, families, or small groups of owners. Of the remaining two, one was partly government owned, and one was not prepared to disclose the necessary information to ascertain this.

Given this background, it is clear that the objectives, philosophy, and approach of the controlling groups or individuals are likely to be of significance. However, clear identification of this was not possible. Nevertheless certain factors were discussed which are worthy of note, as providing useful insight into the area.

(i) Family or individual control sometimes meant that all major decisions were effectively taken by the family or individual, rather than by the management. In other cases the family/individual had the final word on projects initiated by management, e.g.

"A major new investment decision would always be referred back to (Head Office) management. It would go in fact back to the shareholders, and a major new investment decision may not even be ships."

(ii) In most of the family controlled businesses, there was a clear commitment to retain control of the company. e.g.

"They are very keen to retain the business within their own control and pass it on to the next generation, bigger and better than it was when they inherited it."

(iii) In some companies, but by no means all, there was a commitment to remain in the same industry. e.g.

"I am very pleased to be able to say that the ... family, notwithstanding the diversity of interests, are very desirous of continuing in the shipping business, and even though most of them have little or no connection, except through stock ownership, they treasure the family relationship and they want to see us succeed."

(iv) Tax factors appeared to be given a high weighting, since, among other things, they influence the ability to retain control. e.g.

"It would be fair to say that of every working hour in ...'s lives, 10% or 20% of it is spent thinking about tax. Every investment decision, every move that is made. How will this affect the bloody tax position? Which is no way to run a business, but if you are in that situation what else can you do?"

At least one company made a decision to acquire a new ship solely for tax reasons.

(v) In certain companies, where family relationships were complex, there was a need to balance out conflicting personal objectives. e.g.

"The family is like all families. It's composed of individuals who have substantial personal estates, and many individuals who have practically nothing. They have some ... stock, and it's my job to be the coordinating link between them all and keep them happy."

(vi) In the case of control by individuals, the style of that individual, and his personal objectives, were extremely important.

"Even though we're a big company, it's still very much an entrepreneurial company. He's an extremely brilliant man. He gets himself into every facet of the business, and he has a grasp of an awful lot of things, and he's surrounded himself by some rather capable people."

1.6 Other Objectives

The only other objective which was identified by more than one company concerned a desire to stay in the business of shipping. This in turn could be broken down further, as follows:

(i) a desire to stay in a business which has proved profitable in the past, and in which the company

has expertise;

- (ii) a desire to survive in business, where the main activity was shipping of some sort;
- (iii) a desire to keep the fleet at the same sort of level.

These three will all be dealt with in more detail in the next section on philosophies and strategies.

Other objectives put forward by individual companies related specifically to the shipping elements included in the range of activities undertaken. They were as follows:

- (i) The sheltering of earnings for tax purposes (foreign flag).
- (ii) Transport for the main activities of the Corporation.
- (iii) The maintenance of a strategic fleet.

2. Philosophies and Strategies

2.1 Introduction and Overall Findings

While precise figures were not available for many of the private companies included in this category, it is fairly clear (with probably only one or two exceptions), that companies in category 2 were generally considerably smaller than those in category 1. This in turn had a significant effect on philosophies and strategies of companies in this category, when compared with those of category 1 companies.

In an attempt to provide a better basis for comparison between the two categories the same broad headings will be used as were in category 1. However, considerable differences were found in the approach of companies in the two categories. The main areas which arose were:

- (i) Comments on the quality of earnings, with far greater problems being found in this area by companies in category 2. This in turn was influencing attitudes towards the period of investment decisions, with much more use being made of the sale and purchase markets.
- (ii) Areas of business and approaches to diversification. While there were a small number of notable exceptions, in general companies in this category were considerably less well diversified than companies in category 1.
- (iii) The greater concentration on a small number of activities in the shipping industry tended to lead

to investment decisions being "replacement" or "upgrading" decisions, with less time being spent on strategic factors.

(iv) Considerable emphasis was placed on the preservation of flexibility, which in turn enabled an opportunistic approach to be taken to investments, disinvestments and market opportunities. While this approach had some similarities to that of strategic positioning referred to in category 1, the sheer difference in size did lead to considerable differences in the effect that this view had on decisions.

(v) A number of other ideas were raised, usually on an individual basis, covering taxation policy, borrowing, market share, dividends, etc.

2.2 Philosophies with regard to Earnings

With companies in this category there seemed likely to be differences between desired earnings, in terms of both level and quality, and achieved earnings, due principally to major changes in the market in recent years. Virtually all of the companies in this category were fairly well established names in the business of shipping, in one area or another, and had long histories of fairly high quality earnings. In recent years, however, due to the dramatically increased volatility of the shipping markets, the quality of earnings from trading had fallen significantly. This in turn had led to a change in attitude towards the period of holding assets, with increased attention being paid to the sale and purchase markets; with the aim of achieving capital profits to balance up poor trading results. Examples of the kind of comments made include:

"I think the only way to make profits in the tramp market is to buy and sell, if you get it right."

"One has to say, that where British owners have been lax is that they should have had the guts to sell the odd ship when it is at the top of the market ... You have to consider trade in ships as a very important part of shipowning."

Whether such an attitude is solely the result of market conditions, and is thus a response to these changes, rather than an actual change in philosophy, is not totally clear, though it seems highly plausible. What is clear is that six of the companies in this category considered that a fundamental change had taken place in their overall thinking about the market they were in, and very clearly flagged it in discussions. Interestingly, all six companies were mainly engaged in the bulk trades, a point which will be referred to again, both below and in the next sections.

While other companies did not emphasise this point in quite the same way, some reinforcement

was found in slightly different ways. The response of one company was to move from owning ships to chartering ships, and subsequently to the outright sale of the shipping business, principally because earnings were simply not high enough, or of the right quality. At least three other companies clearly considered capital profits on ships important, but did not emphasise it, in the same way as the first six, principally because it had always occurred to some extent. It was thus not seen as an important change in philosophy.

As indicated above, the major changes in attitudes seem to be found in the bulk trades. There is little doubt that, at the time of the interviews, the bulk trades were going through a somewhat traumatic period, as is evidenced by the following comments:

"We're all fighting for our lives at the moment, to even exist, because ... if you look at the back page of Lloyds, and you work out the running costs, the average running costs for our sort of ships is something in excess of \$4000 a day. Well you won't find a fixture that equates with that situation."

Similar concerns with survival were found in four of the remaining five bulk carrier companies referred to above, and in three liner companies.

In comparing the attitudes of category 1 and category 2 companies towards quality of earnings a single striking difference arose. The category 1 companies clearly considered quality of earnings to be paramount, and areas of activity were very largely influenced, if not actually determined, by reference to earnings quality. With the category 2 companies the emphasis tended to be the other way around. Companies in this category were more likely to find themselves fairly well committed to a particular set of activities, and were then subject, much more certainly, to the vagaries and volatility of that market. This will be dealt with in more detail in the next section. It does of course pose problems of flow for this thesis, in that a similar order of headings is sensible for purposes of comparison, but, in terms of the logical development of ideas within the category, section 2.3 ideally should precede section 2.2.

2.3 Areas of Business/Approaches to Diversification

Reference has already been made to the fact that the vast majority of the companies in this category are considerably smaller than those in category 1. This in turn means that, however attractive diversification into different activities may seem, it is not always a practical proposition, as is shown by the following observations:

"We've really got no diversification at the moment ... One of the problems in our sort of company is that your capital base is too small really ... Quite frankly we can't afford to do anything else at the moment."

"They (the public companies) have been in a position to have a much bigger capital base. They have much bigger resources. They don't have a cash problem. They say they have, but all that means is that it is down to what it was. But they have been able to have this cash to invest and diversify, which is what we would dearly love to do."

In fact of the 18 companies in category 2 at least six (at the time of interview) had no diversification at all outside of shipping. Five of these were actually confined to one small area of shipping, with the sixth having only two different shipping oriented activities. Two companies had extremely limited diversification, into areas which seemed closely related to their mainstream shipping activities in one way or another (e.g. incinerator ships, real estate, etc.). Overall the level of diversification fell far short of that found in all but a few of the category 1 companies. Two cases were found of diversification into fairly closely related areas, with broad rationalisations being given as follows:

"We have, for better or for worse, decided to concentrate on marine related opportunities. We do not go for what we would term the easier side of the business. By that I mean we go to the more sophisticated side. Everything we do is sophisticated. A great deal of skill is required. The bulk carrier market, one can say, well, there's not much skill required there, and that's probably true. That's why, in recent years, we have tended to go to the more expensive end of the bulk carrier market, because there we feel that we can compete with the Far Eastern competitors. If we go to the cheaper end, with our crew costs we just can't compete."

"Originally we were a typical shipping company and considered to be deep-sea transportation. Since then we have evolved into a transportation company, and consider our business to be the handling of transportation from the point of origin to the doorstep of the end user. Therefore, in addition to deep-sea transportation, we have added rail, road, inland waterway, coastal tankers and storage terminals to the services we can provide our customers." (Stolt Nielsen. The Bulk Liquid Distribution Company, P4)

Clearly assessing success for private companies is a difficult thing to do. However, there is little doubt that the last two companies referred to above, which have built on their considerable expertise and experience to move into related areas, are among the most highly regarded companies in this category.

In the remaining eight companies diversification was more widespread, and in six of these cases the diversification was the result of a positive decision, influenced by the same kind of ideas on quality of earnings as were referred to in category 1. For example, companies such as Lyle and Hogarth appear to have searched for, and achieved, a greater spread of interests. At the time of the interviews

Hogarth's activities included, inter alia, housebuilding, motor distribution, leasing and travel, as well as shipowning. Lyle's activities included insurance broking, offshore services and electronics as well as shipowning. In both of these cases however, the shipping activities still accounted for the vast majority of turnover. Ellerman was involved in brewing and travel, as well as shipping. Brewing appears to have been consciously entered into as a diversification, since it was seen to be a nice steady profit producing business that would help carry shipping through the lean years which were associated with it. Of the other three companies in this six referred to, one was well diversified in shipping related areas, but also had at least one other totally unrelated area of activity, while the remaining two were mini-conglomerates, each with four or five broad areas of activity, with shipping representing only a proportionate part of its activities.

The remaining two companies unaccounted for in the 18 companies of category 2 were somewhat different in character. In one company the shipping activities were both supportive of a second (more important) area of activity, and earned additional revenue and profits. In the second company a massive amount of funds had been invested in a second line of business, with the result that the shipping activities were now a minority part of the total.

Clearly the companies in this category provided a wide spectrum of attitudes towards diversification, and its effective achievement. However, there is no doubt that overall levels of diversification were much lower than those in category 1. As pointed out above, some of this difference is accounted for by differences in funds and therefore opportunities. Some, however, is clearly related to attitudes, with managers not really seriously considering diversification to any significant extent, or indeed asking why they are in the areas of activity they are in. The area of activity was frequently seen as a given factor, unlikely to be changed, as is illustrated by the following comment:

"We have not looked objectively at whether we should be in this business or not. We've rather adopted the tack, that we are in this business. There are lots of good reasons for saying that ... If one's family has been working in it for 150 years ... the family has seen it all before. There have been bad periods before, and yet it's remained a good business for people to be in, and we've heard pessimistic prognostications before, and we've seen these reverse. Now unfortunately that philosophy in the last ten years has seen the undoing of some fairly established names. Whether in the end we shall be right, and it is the right thing to be in, I don't know. But we did not give sufficient thought to whether we should be in this business or not."

Returning again to the question of size, and opportunities, it is clear that many companies in this

category were in rather different areas of business – even within shipping – to the larger public companies. Ten of the 18 companies were involved largely in the bulk trades, both dry bulk and tankers. Five were involved largely in liner trades, but this was generally on relatively minor routes, or as members of consortia. Two were operating in specialist trades (LNG ships and parcel tankers), and one was involved in a variety of activities. In short, a large proportion were in relatively low cost areas of shipping, where barriers to entry were low, where it was very difficult to bring any special skill or expertise to bear. This is certainly the case with the bulk trades, though admittedly many of the companies in this category tried to be the most efficient/lowest cost operators in the trade. Inevitably, the achievement of this kind of advantage is difficult in the bulk markets. Even in the liner trades care was generally taken to ensure that the market was not one in which the company would be in direct competition with the large liner companies. Consortia were often the only way in which some of the smaller operators could continue in the liner trades, since the larger trades required a certain minimum number of ships to provide a viable service with a reasonable time interval, and few individual category 2 companies could afford such an involvement.

Overall the ability of companies in this category to insulate themselves against risk was seriously limited. Sheer size (or lack of it) prevents the achievement of the policies found in category 1, with the result that companies are forced to accept the vagaries of the market they are in, to a much greater extent than category 1 companies. This in turn causes the attitudes referred to in 2.2 and results in differing attitudes towards the type of assets acquired, and to debt and liquidity. These will be dealt with in later sections.

2.4 Types of Assets and Approach to Acquisition

Given the comments of the previous sections it was not surprising to find that in investment decisions there was a major emphasis on obtaining the "right ship". The majority of new investments appeared to be of a replacement type, and were usually associated with the idea of upgrading tonnage, although examples of expansion were also found. Most companies in this category had a fairly clear view of the business they were in, and hence the type of assets which were needed. This was particularly true of the companies in the bulk trades, which appeared to have a fairly clear idea of what type of vessel was needed, as is evidenced by the following two illustrative observations:

"As far as we're concerned, the sort of business that we operate in, the 26-27,000 tonner, with efficient gear, that is cranes of the 25 ton type, I think has a place in the world for quite some years to come. I believe that simply because one of the main reasons why people feel that it is a good sort of workhorse of the future (is that) so many ports of the world have not been improved, they haven't been enlarged, very few have spent money in producing efficient ports."

"We have certain constraints in the trade on the size of a ship. From a practical basis we can't build a ship that's much larger than 580', because most of the berths we go into are restricted to that. The draft has probably got to be somewhere in the region of 35', perhaps a little more than that, ... so probably 40,000 dwt is probably about the maximum you're ever going to see in the near term for this kind of ship ... also you're dealing with a trade that is shipping small lots of cargo. If you get too big it's going to cost you an unholy amount of money to handle it. Even now ... we do a great deal of barging to minimise the number of berths we go to. In other words there's a lot of study goes into the science itself of running ships."

Decisions in fact tended to be based more on the analysis of the characteristics of the ship to be acquired than on the expected market characteristics. In the detailed discussion which took place in some of the companies, on specific investment decisions actually made, several instances were found of ships being acquired to suit some kind of implicitly defined "fleet concept", without any detailed plans being made for their use. In one such case some \$40M was invested because financing conditions were excellent and the ships were of the right type, but no clear idea of their utilisation existed at the time of the order. However the company had carried out an extremely rigorous analysis of its area of operations, and had established a fleet concept which was basically for handy sized bulk carriers, of a shallow draft, approximately 40,000 dwt capacity, and with sophisticated gear on deck. The logic of this approach was based upon the idea that in the geographical area in which the company operated there were a considerable number of ports with poor loading and berthing facilities, which were likely to become rather more important in years to come. Shallow draft vessels with self discharging gear would enable most of these ports to be utilised by the ships of this company. The capacity of 40,000 dwt was the largest vessel consistent with the above characteristics, thus enabling economies of scale to be achieved with regard to trade through these ports.

An approach of this type, while common, would appear to be a necessary but not sufficient part of the analysis. An uncritical commitment to the industry, with limited funds for diversification into other areas, is likely to lead to a fall back to this kind of thinking.

The idea of a fleet concept also led to a constant desire to upgrade the fleet. In practice this meant constantly trying to obtain a younger, and presumably more efficient, fleet. This pre-conditioned most investment decisions, and led to an investment approach such as the following:

"The way that people like us would build up our fleet would be to sell a twenty year old ship, and hope to buy one say, eight years old. This is how you gradually build your fleet up again. There's no other way, because your resources after a long recession like this are just gone. You've used your cash to keep your ships running."

A small number of companies made comments about the advantages, in terms of both operations and maintenance, of operating the same kind of ships under some kind of fleet concept. A similar number pointed out the importance of getting the best deal possible on acquiring ships, since most owners in this category were likely to be operating ships of the same characteristics, with the same kind of cost structure. Lower acquisition costs were seen as providing a good competitive advantage.

2.5 Flexibility/Opportunism

Following on from the earlier sections on philosophy, it should be clear that companies in this category did not have the kind of flexibility found in category 1 companies. Various arguments and positions were put forward however, which were supportive of the position that flexibility is a desirable characteristic. For companies of this size flexibility was generally confined to market and operational flexibility, with little strategic flexibility really existing. Various comments were also made implying a desire for financial flexibility, but the recent recession had taken much of this flexibility away.

For most of the bulk carrier companies flexibility was sought by concentration on handy sized bulk carriers, e.g.

"We have tended to take a policy decision to go for the handy size, because of their flexibility ... and the handy size keeps increasing ... now its around 30,000 tons."

"We tend to go for the most flexible animal, so we know it's going to be coal, grain, steel, that kind of trade. We haven't of late tried to fix ships from delivery."

In the liner trades various changes were taking place to preserve flexibility. In one case the changes related to the commitment implicit in ship ownership, e.g.

"It is our view that because of the surplus tonnage that is currently on the market, and studies have shown that this is likely to increase over the next six or seven years, we believe that it is going to be cheaper to charter in on the market than to actually own ships. Apart from anything else you have flexibility and ... a wide range of stuff available, and these ships can be crewed by foreign crews - cheap crews. If you go out and buy your own ship first, you've got to make a long term decision about the need for that ship in the future. Secondly you've got to buy it at todays costs and todays exchange rates. You've got so many variables that its almost impossible to get it right. Apart from anything else, the trade that you're buying it for may not develop as you think. It's our view that the business of ship

owning and management and so on could very well become different from the business of actually trading and marketing."

In other cases changes in ship design, or container design, such as the sea shed being developed by Farrell Lines, helped with regard to market and operational flexibility.

2.6 Miscellaneous ideas on Philosophy/Strategy

In spite of the earlier comments about the move towards greater involvement in the sale and purchase market, the majority of investments were still intended to be long term. Thirteen of the 18 companies specified an expected period for holding vessels. The shortest period was six to eight years. Of the five which were not prepared to specify a period of this sort, one was simply not buying at present, while the other four made comments which implicitly made it clear that the expected period of holding was medium to long term, but that market conditions might change this. An illustrative supportive comment on the expected period of holding is given below:

"We're not in business to make a killing tomorrow. We're there for the long haul ... The company has always bought ships to operate and then has generally scrapped the ships ... Generally most of the ships that have been bought have been bought, rebuilt, operated."

The intention of holding assets for a long time is not necessarily inconsistent with greater use of the sale and purchase market. Nor should greater use of the sale and purchase market be presumed to mean that companies in this category were becoming speculative in their investments in the sense of acquiring ships with a view to selling them later at a capital profit. No company invested in vessels for speculative purposes, though increasing numbers were being forced to invest in ships without any guarantees of employment. One company, in discussing its considerable interest in the sale and purchase market, explained that it would only acquire vessels at low prices, with a view to ensuring that it could always provide cheap rates. A second company expanded its ideas on speculation as follows:

"There are occasions when we will buy a unit, not having a charter fixed. We do that from time to time. In the liner service, where the liner service is like a bus service, you have an idea of what's required in that service - its quite a different investment decision. If you're building a drilling rig or a bulk carrier without having a charter then it is speculative from that point of view: But clearly the Board took a view on how we see the drilling market, and the bulk carrier market, in the years ahead."

In fact attitudes towards investments were generally conservative, and, while many of the

decisions made in recent years now appear unfortunate, there is little doubt that managers simply did not correctly gauge the risks actually involved. For example, detailed discussions of a project which caused major problems for one company elicited the following comment:

"We did not produce conservative projections. We tended to feel that the projections that we were producing were on the conservative side ... That did not turn out to be true, but that's one of the difficulties of forecasting, that really the fluctuations, at least recently, have been so huge that you would be considered insane to predict fluctuations like that."

Another company, which had invested substantial sums of money in vessels not backed by charters, made it quite clear that they had considered carefully the risks involved, and were of the opinion that the company could *"stand the commercial risk"*. However this investment had in turn changed attitudes towards further investments.

"Within that context our criteria is quite simple. We will not put (further) capital at risk. We will only enter into a U.S. flag domestic venture ... that gave us essentially a back to back full payout deal. The reason we have this criterion is that we have just invested \$... M in ... new ships that are free, and we have said that that's enough of a risk for us at this time, that we have spent that money in consideration of a market which is protected by law, and law can be changed."

Other topics for discussion which arose in the areas of philosophies and strategies covered the following:

- (i) Taxation aspects – emphasised as a major component of the decision in two companies, but of some importance elsewhere. Under more profitable economic circumstances it seems likely that tax considerations would be given more weight than currently. At present a substantial supply exists of capital allowances and losses to be carried forward.
- (ii) In one company synergies existed between ship owning and operations, and ship management and training, clearly influencing certain decisions.
- (iii) Market share was considered to be important, though secondary to profits, in one of the specialist companies, and in some of the liner companies. In most other companies particularly in the bulk markets, market share seemed almost completely irrelevant.
- (iv) One company had established a particular trade, supported by long term contracts, and was now in the business of operating the necessary ships in that trade. No strategic decisions appear to have been made or considered in recent years.
- (v) One company ran a shipping subsidiary, on a limited route, with the principal aim of ensuring transportation for its own products.

(vi) In one company, which had gone through a somewhat traumatic period, discussions identified certain problems caused by being too rich and too successful, with the result that planning and control systems were somewhat lax, and decisions had been reached on a re-active, rather than a pro-active basis. Current market conditions had necessitated major changes to this approach.

3. Corporate Planning

3.1 Introduction and Summary of Findings

This section is concerned with the identification of the nature, form and content of corporate planning systems for category 2 companies. Overall, it is clear that few companies in this category have either formal or sophisticated planning systems, although evidence does exist to show that in these few companies a high degree of sophistication can be found. Clear reasons were given in other companies for not having planning systems. These broadly covered resource issues, forecasting difficulties, inflexible business strategies leading to few options, and the need to survive in the short term.

3.2 Corporate Planning Systems

Of the 18 companies in this category 14 had no formal systems of corporate planning, or indeed of any planning systems, other than one year budgets. The latter were almost universally found, although one company admitted that even this was a recent introduction.

Of the four companies with formal planning systems, three covered periods of five years ahead, and one of three years ahead. In one of these cases the planning was restricted to members of the family, and subsequent comments by non-family managers tended to imply that planning was of a fairly general nature. i.e.

"It's something which is very much developed and kept by the family, but I am not privy to it, other than in the broadest sense ...Our Chairman has from time to time shown great interest in all sorts of erudite forecasts, and tried to get me to do it for him, but it's always failed, because one doesn't have the time or expertise necessary to do it intelligently, and there's such a mass of conflicting data published every day of the week by all those so-called learned people from H.P. Drewry downwards and upwards."

In the other three cases, planning was fairly sophisticated. These were the only companies in this category where plans even approached comparability with those of category 1 companies in terms of their degree of sophistication. They were among the largest and most respected companies in category 2. The most sophisticated approach (which did compare very favourably with that of category 1 companies) included the following elements:

- (i) A survey of the business environment – covering five years.
- (ii) Projections of relevant supply and demand for particular transportation services.
- (iii) Analysis of GNP/Industrial production/growth.
- (iv) An assessment of political factors.
- (v) A detailed cost analysis.
- (vi) A detailed financing analysis.
- (vii) A detailed analysis of business cycles.

A specially designed computer programme enabled planners to devise plans under various scenarios, with the option of considerable sensitivity analysis being available. Results were then followed through in terms of the potential effect on the three financial statements.

The other two companies with what might be termed well developed planning systems did not have the same amount of information provided by planning staff. The analysis of the business environment and market analysis was thus generally less wide ranging, and forecasts tended to relate more to specific trade routes and/or products, and to supply and demand relationships on particular trade routes. More emphasis was placed on agency reports for market forecasts. The three/five year plans were thus regarded as more of a guesstimate than in the case referred to above, though detailed operating, staff and equipment budgets followed from them. Plans were followed through into the three main financial statements and carefully monitored. Given the lower degree of confidence in the forecasts produced, a considerable amount of time was spent on discussion of the assumptions underlying the plans.

Of the remaining 14 companies, four had undertaken significant one-off strategic analyses in recent years, in all cases prior to major investment or disinvestment decisions. These analyses typically covered many of the ideas included in the previous paragraph, albeit on a less regular and more ad hoc basis. In the other ten companies corporate planning systems were almost non-existent, beyond the annual budget. However, particular issues were raised in a number of companies, as being

issues which would be thought through in some detail by senior managers, again usually, though not always, prior to investment or disinvestment decisions. These included the following:

- (i) Type of fleet or ships.
- (ii) Market trends.
- (iii) Chartering policy.
- (iv) Financial factors – particularly the ability to service debt.

These issues were not raised in all companies, and were typically dealt with in a somewhat ad hoc way.

They will be dealt with in more detail in the section on appraisal methods.

It has already been pointed out that the initial emphasis of this study was on an assessment of finance theory, hence detailed questions were asked about appraisal methods, and these are dealt with in section 4.2. However, the importance of other factors, such as corporate planning systems, and macro-economic indicators and similar variables, became clear at an early stage, if the forecasts needed for the appraisal methods were to be put in perspective. The questioning referred to above relates to the use of formal planning systems. More detailed questions were also asked about macro-economic indicators and similar variables, in relation to their assessment and significance for decision making. The overall findings of this line of questioning were as follows:

- (i) Three companies had specialist staff who looked at macro-economic and related figures in some detail, and incorporated them formally into the planning process.
- (ii) Seven companies looked at some macro indicators in some detail, as one of the factors likely to influence particular decisions. Commonly referred to indicators were as follows:
 - (a) GNP, industrial production and related economic trends
 - (b) Estimates of trade flows on particular trade routes
 - (c) Trade flows and the potential for containerisation
 - (d) Global supply/demand relationship for particular types or sizes of vessels
 - (e) Inflation, wages, cost escalation, currency changes
- (iii) One company relied on consortia for its information on macro-indicators likely to affect its shipping activities, all of which were within consortia.
- (iv) Seven companies did not do any sort of analysis of this type, other than keep a general eye on trade and related press articles.

Emphasis depended on a variety of factors, the most important of which will be picked up later. The

type of trade in which the company was operating was probably the single most important factor.

3.3 Reasons given for the absence of Planning Systems

Clear reasons were not always given for the absence of planning systems. However, three reasons recurred frequently.

The first of these concerns the question of resources. It was pointed out that few companies in this category could actually afford the resources considered necessary to do the planning. Very few raised the opposite, but equally valid question of whether they could afford not to.

The second reason, and undoubtedly the most widely held, was that forecasting was so difficult that plans were unlikely to be achieved. Problems of forecasting were highlighted for the industry as a whole, for particular periods, and for particular types of trade, in statements such as the following:

'I think unless you have fixed contracts for five years ahead you're kidding yourself on. Sure you can have a play at it, but I don't think you'd get very far.'

'I think 1980 was the year when everybody got it wrong, Governments as well. We made a lot of bad decisions on chartering. The whole tramp market went bananas.'

'But given factors that you know, you can get fairly close, but its still a bit of a gamble if you project anything ... to take it for another five years is virtually impossible, with shipping affected by politics, the middle east wars, all this sort of thing comes into it. There are too many imponderables at the moment.'

A third reason given reflects an extension or continuation of some of the ideas included in the section on philosophies and strategies. A number of companies clearly considered themselves to be locked into, or to have a commitment to, the industry, or to particular sectors of it. Such companies saw little point in the type of planning referred to earlier, since they had little room for manoeuvre. For example, two of the American Liner companies in this category were involved in particular trade routes, for which they received operating differential subsidy. The impossibility of obtaining such a subsidy on alternative routes was recognised, so alternative trade routes (and associated economic and other macro-data) were simply not looked at. Where this kind of situation exists and the scope for different courses of action is limited, the perceived most relevant questions concern the suitability and comparative cost effectiveness of the vessels being used, and relatively short term financial factors. The emphasis is thus tactical, operational, or financial, but seldom strategic.

• Closely associated with this is the question of survival, previously identified as a cause for

concern for some companies, in the section on philosophies and strategies. Such companies are concerned to see how long they can survive under certain assumptions, and the effect that these assumptions would have on their sale, purchase, and chartering decisions. In fact the fourth company referred to in section 3.2 with a formal planning system had done just that. A five year forecast of earnings under different assumptions had been projected, with the purpose of showing how long the company could survive under these assumptions. This approach has led to the sale of one ship. Since the emphasis is on survival under differing assumptions, less emphasis is given to forecasting per se, and more to identifying potential liquidity implications.

Finally, it perhaps needs to be noted that some individuals clearly felt that the absence of planning systems did not imply an absence of planning or forethought, and comments such as the following were made:

"Your plans are always there, but they depend entirely upon the amount of freight that you collect, and the prospects for the future, and the prospects at the moment are anything but bright. I happen to believe that in 18 months time, provided nobody starts flooding the world with new ships ... a situation will arrive when we again will be able to make sufficient profit (a) to cover [our] running costs, but also (b) to leave something left over towards replacement. You see you're continually planning ways and means of economising in every department you can on a ship. It isn't something you simply allow to drift away... It's a daily discussion on how you can cut on this."

"It's an industry where you can only start to plan when you can see ahead prosperity for a number of years."

"But certainly if we found business where we could get a guarantee that the ship would be taken back on charter for ten years, we would, even today, consider it. But these are the sort of things we're enquiring into all the time. But it's a very difficult world we're operating in, and your great thing is you live from day to day and hope you can survive until tomorrow."

How much of the above is wishful thinking, or merely a defensive reaction, is unclear.

4. Project Appraisal

4.1 Introduction and Summary of Findings

Given that one of the purposes of this thesis was an assessment of the extent to which various methods of appraisal were used, a number of specific questions were asked about the forecasting of

various figures and the use of Payback, Accounting Rate of Return, Net Present Value, and Internal Rate of Return. In general it was found that forecasts of operating costs occurred more frequently than forecasts of operating revenues, and typically for longer periods. However, there were few cases where any degree of confidence attached to revenue forecasts. With regard to the use of the traditional appraisal methods, it became clear that they had a relatively small role to play in investment decision making. An attempt was then made to analyse the criteria and appraisal methods actually used in practice, and to summarise this into a likely behaviour pattern. Given the significant differences which exist between companies operating in the bulk, liner and specialist trades, this part of the analysis is broken down into these three groups. Investment decision making was found to be based upon a variety of factors, the most important of which were market analysis, ship characteristics, liquidity and profitability considerations. The final decision usually reflected a compromise on these, together with elements of experience or intuition.

4.2 Appraisal Methods used

As with category 1 companies, detailed questions were asked about the nature and period of forecasts prepared, and about particular appraisal methods used. However, as has already been noted, specific questions do not always lead to specific answers. Detailed questioning sometimes led to initial responses being revised in the light of new information.

Questions on forecasts of operating costs and revenues were asked in some detail, being necessary ingredients to most of the traditional assessment methods. The responses indicated that such forecasts occurred less than might have been expected, with operating costs being forecast more often than operating revenues. A summary of the responses is given in table 17.

Period Ahead in years	None	1-2	3-5	5-10	10+	Unspecified
Operating costs	-	5 (8)	3	3	3 (4)	4 (0)
Operating revenues	1 (6)	3	2	2 (1)	2 (3)	8 (3)

Table 17 Forecasts of costs/revenues - category 2 companies

The first figure in each column represents the initial response to the question. The figure in brackets represents modifications which seemed appropriate after further detailed questioning on actual case

histories.

In interpreting the above table the following observations are likely to be helpful. In several companies which forecast operating costs for 1-2 years ahead, the idea was simply to ascertain a break-even or hurdle rate for revenues. In one of the cases where revenues and costs were forecast for a period of over ten years, a policy of not building ships without a charter had been adopted. In this case there were clear revenues to match against costs. Of the four companies which did not specify a period for the forecasting of operating costs, one was in fact fulfilling contracts and charters made some years ago, and was not actively looking for investments. It clearly had a very good idea of what its costs and revenues were likely to be for the remainder of the contractual periods. A second company was not prepared to acquire vessels, and had made a decision to charter. However, given that this company had a detailed budgeting system in operation, it is clear that costs were known in detail for at least the next year. The other two "unspecified" were in fairly specific trades and knew their costs in some detail. Three of the four companies in the "unspecified" column for forecasts of operating costs could thus reasonably be incorporated into the 1-2 year column, with the fourth being incorporated in the 10+ column. The bracketed figures show these revisions. With regard to operating revenues the following factors are relevant. In one of the cases where revenues were allegedly forecast for 5-10 years, further questioning revealed that in fact the projects being analysed were cost-savings projects, so detailed knowledge of revenues was not needed (or actually forecast). Of the eight "unspecified" cases further questioning made it apparent that revenue forecasts were not done in four cases. Of the other four, forecasts existed in three cases for certain types of project, but not for others, while the fourth company had revenues from long term charters, making a shift to the 10+ column appropriate. As with operating costs, the revisions for operating revenues are shown in brackets.

The final factor with regard to forecasts concerned estimates of disposal value. Only one of the 18 companies initially said that such estimates were made, but even then a healthy scepticism existed, as is indicated by the following statement:

"The big unknown in ship calculations is the value of the ship after five years or after ten years ... You can struggle on year after year not really making very much and then when you sell the ship it all comes right - or the other way around."

In fact this company used different assumptions about disposal values in an attempt to establish the sensitivity of projects to changes therein, rather than attempt to estimate disposal value per se.

Questions were then asked about the extent to which inflation was built into forecasts. Two companies dealt with inflation on the basis of broad global assessments. Three companies escalated costs in a broadly based manner. Only four companies adjusted costs and revenues on a specific basis, while nine companies either used current costs and revenues in their calculations, or ignored inflation completely. One company specifically identified a move away from adjustments for inflation, i.e.

I think we're going away from that (i.e. inflation adjustments) a little bit, in that we, provided we can get the relationship between costs and revenues right, don't feel we have to bother too much ... We probably just run that right through for 10 years, rather than this sort of artificial business of increasing the running costs by some sort of percentage every year."

Following on from these details, it is not surprising that the formal appraisal techniques based upon forecasts were found to have little role to play in project appraisal in category 2 companies. Of the 18 companies interviewed, all but one answered questions concerning the use of Payback, Accounting rate of return, Net present value, and Internal rate of return. These results are summarised in table 18.

Number of Methods	Payback	ARR	NPV	IRR	Total
No methods					9
One method			1	1	2
Two methods	1	1	1	1	2
Three methods	2	2	2	3	3
Four methods	1	1	1	1	1
	4	4	5	6	17

Table 18 Appraisal methods used - category 2 companies

It perhaps needs pointing out that the "Total" column refers to the number of companies actually using the methods referred to, whereas the total row relates to usage of particular methods. In other words the use of the above appraisal methods (19 in total) was confined to eight companies, with none of the above methods being used in nine of the companies. In fact subsequent discussions suggested that two of the companies which stated that they used three methods (ARR, NPV, IRR and PB, NPV, IRR), were not likely to use these techniques very often, and certainly not as a matter of routine. In the first of these cases it became clear that discounting techniques would only be used to determine the most

appropriate financing method, while in the second case the quotation given below certainly suggests that discounting techniques are given less weight than implied by the original answers. i.e.

"We use the dcf thing ... but ... I think the payback is the more important. But we do normally evaluate it under a number of alternatives."

This still leaves 3 or 4 companies supposedly using discounting techniques. The earlier reference to the fact that only one company appeared to make any estimate of disposal values casts some doubt even on these claims, or at least on the validity of the figures actually calculated, unless vessels were chartered in, rather than purchased.

Interestingly, where discounting techniques were used, the basis of the calculation was always cash flows including debt service commitments. e.g.

"We'd have the cost of the ship, the loan received, loan repaid, capital and interest, running costs, income, ... the value at the end, the cash flow, and the dcf return (over 10 years)."

"One would have to take the total cost of the decision. It would really be the case that the financing is part of the price. It would be part of the deal ..."

The theoretical implications of this were seldom recognised. The discount factor or hurdle rate of return would need to be related to the cost of equity (almost always for highly geared projects) for the above approach to be valid. Given the high risk involved this cost would be high. No company in this category made any attempt to relate these two aspects of project appraisal. As with category 1 companies further questions were asked of companies which said they used discounting techniques, in order to clarify what was actually done. They were asked to specify the rate of discount they used, and to explain its rationale. Answers indicated a considerable degree of confusion, and differences of opinion. For example, in the company to which the second quotation above relates, the discount factor was based upon the desire to achieve a real rate of return of 3-4%. A second company said that the discount rate would depend upon the cost of money, clearly implying a discount rate equivalent to the current cost of borrowing. One of the companies using the yield method compared returns with market returns, but again made clear that this was a comparison with the current rate of interest. Two companies based rates on the cost of money (i.e. current interest rates) plus a risk premium. In one case this resulted in a target return of 20-25%. In the other the risk premium was likely to be around 5%. Interestingly in this case the idea of opportunity cost was discussed and discarded. It was pointed out that it was all very well talking about alternative uses to which funds could be put, but shipowners were in shipping, not in alternative investments. The 5% premium was thus something of an ad hoc

figure. One company used the internal rate of return, but did not have a single figure criterion. The final company which had said that it used discounting techniques did not provide a clear cut answer to this section, and the general tenor of the discussions suggested that discounting methods were not routinely used.

Three further companies passed comment on this question, even though they did not typically use discounting. One said that the discount rate *"should obviously be based on the weighted average cost of capital"*. One considered a target of 6-7% net appropriate. The third, while pointing out that it was an hypothetical question, said that if it were currently investing, it would be aiming for 10-15% after tax. This was based on an appropriate rate for a high risk, cyclical industry with high inflation.

These results suggest some clear misunderstandings about discounting methods. Errors are being made in their application in three cases, and in the others the approach was somewhat hit or miss. Given the earlier comments on problems of forecasting the doubts about the usefulness of discounting techniques may be valid. If such techniques are used however, care must be taken to ensure that an appropriate discount or hurdle rate is chosen.

Clearly the above results indicate that the traditional appraisal methods set out in most Finance texts are not a significant part of decision making in category 2 companies. This raises the question as to the alternative approaches which are used. In practice some consistency of approach was found, and the results led to a concentration of the analysis into the following areas:

- (i) Analysis of the sector in which the company operated
- (ii) Fleet or systems concepts as opposed to individual vessel appraisal
- (iii) Emphasis on the "right" ship
- (iv) Analyses of costs/revenues
- (v) Liquidity aspects
- (vi) Overall group or corporate aspects

A broad indication of findings is given in table 19. The basis of this table will be explained below, and the results will be discussed in more detail in later sections. As can be seen from the table, significant differences in approach and emphasis were found between the bulk trades, the liner trades, and the specialist trades. These are thus examined separately in the following sections. The total of 18 in fact represents 17 companies for which detailed answers were obtained, one of which had substantial liner

and bulk interests.

Appraisal criterion	Companies with substantial interests in			
	Bulk	Liner	Specialist	Total
General analysis of sector	9	4	1	14
Emphasis on "right" ship	7	1	0	8
Appraised as part of a "system"	0	5	1	6
Appraised individually	11	1	0	12
Break-even rates calculated	8	0	0	8
Emphasis on liquidity	8	4	1	13
Emphasis on overall results	4	1	1	6
Total	11	6	1	18

Table 19 Appraisal criteria - category 2 companies

4.3 The Bulk Trades

Table 19 indicates that no company in this category acquiring ships for the bulk trades appraised them other than on an individual basis, although three companies had a fairly clear "fleet" concept underlying their individual appraisals. By and large this is because the bulk trades operate in a world wide market, with relatively low barriers to entry.

This latter fact also influences the kind of background or macro-analysis that goes on. At least nine of the eleven companies with interests in the bulk trades kept a general eye on economic conditions, mainly through the reading of journals and various reports. In fact it was difficult to quantify or evaluate precisely how much of this sort of background analysis went on, and it is likely that some sort of minimum level occurred in all companies. However, in no case was the analysis comparable to that of category 1 companies, or some of the liner companies in category 2. Particular attention was devoted to supply/demand relationships for those types of vessel in which the company might be interested. Given the almost perfect nature of competition in this area this analysis almost always related to global figures. In no case was any individual competitor analysis done, or any formal attempt made to evaluate political risk.

The analysis of overall supply/demand relationships with regard to particular categories of ship also led in a significant number of cases (seven of the nine) to a search for the "right" ship. In general the "right" ship was one of:

- (i) a type of ship in short supply, relative to current or anticipated demands
- (ii) a type of ship which was suitable for a variety of trade, routes or berths
- (iii) a type of ship (often with modifications of some sort) which would give the owners a competitive advantage, often, though not always, by giving the lowest operating costs.

The kind of thinking found is illustrated by the following quotations.

"(The next stage) goes into specific alternatives that were available to us, ... pricing, delivery, characteristics of the ship, limiting characteristics, and in fact what we wound up doing was taking a smaller tanker which was a standard design from a shipyard, and saying, 'Alright in principle. Let's keep the engine room, and let's blow out the cargo section until we can get the rate down to a point that makes sense'. And in blowing out the cargo section we had to do certain things. We had to say, 'OK, ... , we don't want to go beyond that. We don't want to go beyond 40' draft, because of the characteristics of our ports', so we actually came up with this magic 50,000 ton number."

"Well, whenever there's a cargo in the market, because these are large modern ships with relatively low operating costs, compared with a typical steamship in the American fleet, ... we can take it."

The analyses of costs and revenue relationships for companies in this category involved in the bulk trades also displayed considerable consistency, with break-even rates being calculated explicitly in eight of the eleven companies included. As has already been indicated, confidence in being able to predict revenues accurately was low, and the emphasis was thus placed upon estimating costs in some detail. (In practice these were known with a high degree of accuracy), converting them into a break-even freight rate (or time charter rate), and then making judgements as to the likelihood of this rate actually being achieved. e.g.

"We would do a profile of its costs, and relate it to its market potential, on the time charter or voyage charter rate. Of course invariably you're doing it against the current market."

"You'd do it (forecast operating costs) for 4 or 5 years, being pretty certain that you were going to be wrong. If things were so stable that there wouldn't be fluctuations or imponderables it could well be that it would take you through the 4 or 5 years with some accuracy, but too many imponderables come along. Operating revenues are a completely different proposition. Your running costs ... haven't varied much, very little in fact, but what has varied tremendously is your revenue side ... We know what every ship's break-even is, and I always keep a list on my desk ... and when I see a daily freight rate that exceeds it I feel like celebrating. But I haven't felt like celebrating for a couple of years I shouldn't think."

Interestingly, every company that calculated such rates appeared to base such rates on a cash flow

break-even rate. In other words the break-even rates calculated included operating and financing costs. Financing costs / debt service included both interest and capital repayments. This reflects the importance of the liquidity concerns referred to below.

For the three companies which did not explicitly calculate break-even freight rates, procedures were broadly as follows. One made estimates of costs and revenues for ten years plus, and emphasised the expected relationship between the two, and also expected utilisation rates. This was seen as "very important". Such an approach is similar in concept to the idea of break-even rates. In the second case the company had a policy of not ordering ships without charters, in which case revenues and costs could be ascertained accurately, and a profit per vessel calculated. This enabled the company to:

"... workout a rate of return, and ... also look at when we can pay back the equity. That becomes a key element with us ... We're very conservative. We could go ahead if we believe we could pay back the debt, then the equity, and go for profit further down the line."

Whether such a policy with regard to chartering will continue to be realistic remains to be seen. The third company actually used all four standard appraisal methods in certain circumstances, and break-even rates, or some analysis of the revenues/costs relationship, were implicit in much of the analysis. It was specifically pointed out that, in the absence of charters, current revenue and costs levels would provide the basis for the figures used.

The third area of considerable consistency concerned attitudes towards liquidity, and the importance of liquidity considerations in the decision making process. Nine of the eleven companies highlighted liquidity analysis as being an important part of the process. In fact the majority of companies prepared forecasts of debt service over some period in the future, typically five years, sometimes for the life of vessels. These forecasts, while incorporating debt service obligations for individual vessels, were basically done to arrive at a clear estimate of debt service obligations (including leasing) for the corporation or group as a whole. In two of the nine cases the forecasts were of group debt service commitments. In four other cases these were done and then incorporated into formal corporate cash flow forecasts. In one case forecasts consisted of the estimated cash flow obligations, covering both operating and debt service commitments, for the period for which loans were outstanding, both on an individual ship and a shipping division basis. One company emphasised its concerns with survival in such a way as to make it clear that liquidity concerns were paramount. Only

one company did not emphasise the importance of debt service on a corporate or group basis, and this was explained by reference to the type of company it was and to the fact that projects were financed from different sources, i.e.

"Each project of ours stands on its own legs. It's not carried by another project. And that's because a lot of our projects are financed by different individuals, and therefore it isn't the normal type of corporate entity."

In spite of this, the company still shared the liquidity concerns with other companies in this category, pointing out that:

"We have only ordered vessels where there were charters, and therefore during the term of the charter ... we have sufficient cash flow to meet the capital and debt. Our problem would really arise where we don't have a charter equivalent to the vessels life."

Such circumstances may well arise in the future, in spite of the tremendous drive and personality of the Company President, with the potential result that practice would tend towards that of the other companies in this category.

Two companies did not explicitly emphasise liquidity concerns in their discussions of the appraisal process. In one case a whole range of methods were used, and further questioning on liquidity elicited the following comments:

"Sure, we don't do anything without knowing what our cash flow is going to be. Profits are very fine for people to look at, maybe shareholders, but speaking personally, and speaking as far as my Board is concerned, they are well educated into the cash flow method of accounting, as it were."

In the second case a detailed planning system was in operation, so divisional and group forecasts of cash flow were actually made. The lack of emphasis on liquidity in investment decisions reflected the richness and strength through diversification of this particular company.

Four of the eleven companies involved in the bulk trades specifically prepared assessments of the impact of individual projects on corporate profit and loss statements and Balance Sheets, though the emphasis on corporate profitability was lower than that on corporate liquidity.

Illustrative quotations on views on liquidity and profitability are given below:

"Yes, Profit and Loss, but Cash Flow particularly. That's what it's all about. It's the most important statement. Profit is, in my view, notional to some extent, because it depends upon your depreciation charge."

"We do a calculation for the ship itself, and we also do calculations building the ship into the company. I think the second in some ways may be more important than the first ... The three bits of paper we look at are the Balance Sheet and the cash flow (and the Profit and Loss). The cash flow is certainly the most important one, and the Profit and Loss is probably the least important one. That's possibly because

we are a family company. I should imagine for a public company the Profit and Loss would be of great importance."

A final factor which seemed of significance in investment decisions was what might be termed the "experience factor", or the "intuition factor". Clearly many decisions had a strong element of "feeling right" about them. Sometimes these feelings were justified. Increasingly, as the bulk shipping market changes rapidly, they were not. That they are a significant, if informal (and certainly non-quantifiable), element in decision making, is apparent from the following comments:

"We tend to rely very much on our experience ... I think in the past some of the evaluations were pretty optimistic. Intuition is still considered very highly in shipping, and it's usually wrong."

"You're not just cranking out numbers. You've got to have some sort of intuitive feeling that this is the time to do it. If your planning process said you're all wrong, you would probably change your way of thinking, but if your planning process gives you a reasonable degree of support, it reinforces your intuitive thinking more than anything else."

In summarising this section, the following points would appear to be a reasonable statement of the likely behaviour pattern of companies in this category, operating in the bulk trades.

- (i) Projects are likely to be analysed individually, although some companies are likely to have some sort of "fleet concept", usually related to the purchase of handy sized or flexible ships.
- (ii) The analysis of demand/supply relationships is likely to be broadly based, probably confined to broad impressions obtained from the specialist press, in terms of world trade, GNP, and other macro-economic indicators, but fairly specific in terms of the relationships between supply and demand for particular types of ship. Competitor analysis and/or the analysis of specific political risk is unlikely to occur. Increasingly an awareness of the trends in the sale and purchase market is likely to be found.
- (iii) Considerable emphasis is likely to be placed upon obtaining the "right" ship. Often this is a vessel which gives considerable flexibility.
- (iv) Little attempt is likely to be made to estimate revenues for vessels being considered. The analysis is likely to concentrate on the identification of costs, and from this the break-even freight rate. A judgement can then be made as to the chances of such a rate being achieved. The costs included in the calculation of break-even rates usually includes debt-service commitments, both interest and principal, so the break-even freight rate is a cash flow break-even rate.
- (v) Considerable emphasis is likely to be placed on a liquidity analysis of a project, particularly debt

service commitments. It is likely that the analysis will cover specifically the effect of an individual project on corporate cash flows. Some companies are likely to calculate the impact of projects on corporate profit and loss and Balance Sheet figures, but this is far from universal.

The above factors were found in a substantial number of the eleven companies in category 2 involved in the bulk trades. The actual weighting given to each varied somewhat from one case to another. The following quotations illustrate the approach found in two companies, and provide some overall perspective on the investment decision making process in these companies.

The first relates to one of the wealthier companies in the sector, with its bulk shipping activities being one part of its overall portfolio. It relates to a decision to acquire new tankers.

"If we go onto the ... new ships there were some rather subjective criterion applied, and those subjective criteria were, as I understand it the company took a look at its geographically removed shipping operations ... and looked back over forty-odd years and said, My God, that company's been damned profitable, and not too cyclical either, because of the nature of the business we did.' And they said, 'Well, we've got money. Should we put more in there?' And in looking at the way the company historically did business ... the only alternative was new construction ... The company as a group did not have to say, 'Before we invest this we want to see a positive cash flow, a secure charter, and so on.' Rather the company said, 'We can stand the commercial risk.' (I don't think anyone assessed the Governmental risk). But in that process I am certain that, certainly the equity portion of the investment had to compete with demands (from the other areas of business, within the group) ... To what extent there were quantitative requirements thrown against the plan, in terms of return on equity and so on, I don't think there were any. Projections were made, and there was a desire to stay in the business, in the long term, and this seemed to be a good way of doing it."

The second relates to a company entirely devoted to the bulk trades at the time of the interview.

"The atmosphere was very conducive to activity and I think that we were very concerned ... about building a basis for the future ... and so we considered a number of things ...

"We came to the conclusion that if we were to order new vessels we should look into the smaller tanker sector, because the smaller tanker sector had, first of all, the best balance in the tanker industry. Secondly, it had the oldest fleet, and thirdly, while it had a lot of ships on order they represented a small proportion of the fleet ... So we decided that we should go small tanker ...

"There was an atmosphere of concern amongst some people about what the fundamentals of the market were like. We were a bit afraid that ... the market might be over, that we were heading into a recession ... and that this was perhaps the time to maintain our liquidity, but ... the strong pressure within the Board was to have something for the future, and the expectation that ... things never get cheaper, and therefore you have to go in and grasp the opportunities when they're there because they don't get cheaper ...

"And then there was a tendency towards wanting to do a new vessel, because the argument was, if the recession was coming ... we wouldn't get the vessels for a couple of years, and then the recession would be over when we were taking delivery of the vessels in a recovering market ...

"The first thing that we would do would be to say 'OK, today the rate for this vessel is so and so. If we were to earn at this level, annually, and turn that rate into an annual profitability, and project that for the life of the vessel, what kind of return would it be? Would it be a positive return?' Then we would put the vessel into our cash flow to see its impact on the company over the next five years, based on rate projections of today ... Then we would judge really whether we had the capacity to undertake the project - in liquidity terms..."

"The cash flow was pure liquidity. It was purely to see that our liquidity was maintained at reasonable levels for a reasonable period of time ... I would say a reasonable period of time would be to see your liquidity in hand for the five years period. Maybe perhaps depleting, but certainly not being extinguished within the five year period ..."

"We did not go to a consultant to do a detailed study of the potential use of ... tonners ... We did it in a slightly different way. In ... we were thinking along the lines of this class of ship, and I spent about three weeks in the US visiting our clients there, and talking about this class of ship, which gave me a pretty good idea about whose programmes it was a vessel it was suitable for, and talking to brokers generally about the class and type of vessel. But we didn't do either any internal studies or retain outside consultants to do any study of the class of ship. I had read studies done by people like Drewry who had ... done particular studies on tankers, and had pinpointed well in advance of the recovery, the strong market recovery which was expected in the small tanker sector."

On being asked whether, with hindsight, the decision to go ahead with the purchase of new vessels had been correct, the following response was given.

"The game isn't over yet, so it's still too early to tell. What I can say absolutely is that I could have done substantially better. I could have bought the vessel for substantially less money, on substantially better terms, and I could have kept substantial amounts of money in my Balance Sheet and earned substantial interest while I was waiting. It's the best vessel to have ordered at that time, and it's the best vessel to order today. Whether it was ... a good decision to order anything at all is another matter."

4.4 The Liner Trades

Table 19 indicates that five of the six liner companies very clearly appraised projects as part of a system, with only one apparently viewing projects on an individual basis. This company was confined to one trade route, on which Operating Differential Subsidy was paid. Investment decisions were thus confined to replacement decisions or to moderate increases in capacity. Where the decision was essentially one of replacement, the core of the analysis was on establishing comparative figures on a cost per ton basis, for the existing vessel/s and its potential replacement/s i.e.

"If we're going to be in the same business with the same requirement we're looking at the best profit we can generate with the particular ship."

If the capacity of the replacement was going to represent a significant increase in tonnage on the liner route, market studies and market share analyses would be carried out. In practice quite significant

changes in the type of vessel used had occurred, with new vessels having the capacity of between two and three of the vessels replaced. While strictly such decisions could be viewed as 'individual', a clear awareness existed of their role in the liner system in which they were to operate.

Of the other five companies, two made it clear that the appraisal was related to its liner fleet, or particular trade route on which it operated a liner service, as follows:

"In the liner trade it (the appraisal) would be part of the liner fleet, as to what its prospects are, and how it would fit into our fleet. Bulk carriers and rigs tend to be looked at as projects in their own right."

"I suppose in effect we would do it for the trade route and realise that we had two or three ships assigned to the trade route."

One company emphasised the importance of membership of consortia for all but the largest liner companies. It went on to indicate that in project appraisal it is membership of a particular consortium which is the project. i.e.

"... you know, you can't look at the ship by itself. It's the decision to trade on that route. Because further down the pike you can make a decision to charter in, or to purchase, or to do whatever, but it's the initial decision to trade on that route which provides you with so many obligations, to the market, to customers, to employees, and so on, and that's the really big decision."

The other two companies were committed to single liner routes to parts of the world which could be regarded as less stable. In both cases decisions made were made in the context of that trade and its peculiarities. For example, one of the trade routes was to the Middle East, and it was found to be *"very hard"* to forecast what was likely to happen. Part of this was due to political uncertainty, part to currency fluctuations, and part related to uncertainties about the level of governmental and/or military cargo to the region. The company attempted to build more flexibility into its activities by taking more charters on its ships, rather than dedicating the whole ship to the liner route. Its major concern was to ensure that it introduced such modifications as were needed to *"handle the changing market place"*. All decisions were thus made in the context of an assessment of where the market is going, what part of it is containerisable, and what market share can be obtained. The fifth company had bought vessels for a particular trade, clearly knowing what they could do with them, and how they would fit into that trade.

As with the companies involved in the bulk trades, a certain minimum level of market analysis seemed to exist. However, the analysis for the liner companies generally covered such things as economic forecasts, currency forecasts, and historical and expected trade flows for particular routes.

The weighting given to different aspects varied from company to company, but the following quotation is illustrative of a typical approach.

"This is what we do routinely, with reference to our marketing. We are always looking at the economic forecasts, the value of the dollar, the opportunity of particular countries to buy American goods and vice-versa."

With consortia the same kind of analysis also seemed to go on, although the consortia often did the analysis, rather than the company itself. e.g.

"The consortium, when it's large, tends to have its own specialist staff ... and they are working from published government statistics in the various countries that the trade serves, and [looking at] the correlation between those statistics and total volume carried by both conventional and container shipping, assumptions about the penetration of container shipping into the total shipping market, i.e. how quickly is the conventional shipping being moved over, etc. So it's a very composite thing."

No liner company in this category did an analysis of the world supply/demand relationship for ships of a particular type. Indeed, in only one of the six liner companies in category 2 was emphasis specifically placed on the "right" ship. This is not to say that detailed quality and design aspects of the ship were not important, but that the emphasis was first on the liner service or trade route, and secondly the ship. In fact in discussing decisions it became clear that the identification of certain desirable ship characteristics was an important part of the analysis, particularly those relating to fuel efficiency, maintenance costs, and flexibility. Reference was again made to the need for ships to be cost effective, since it was clear at the time of the interviews that it was only the least cost carriers that were making any money. That position is unlikely to have changed since.

The Sea Shed, being developed by MARAD and Farrell Lines, provides evidence of the search for greater flexibility of operations. One liner company, as mentioned earlier, was attempting to mix a liner service and charters, again with the objective of achieving greater flexibility. One company had a policy of having the *"best ships in the trade"*, though it was not clear in precisely which area (i.e. running costs/maintenance costs/flexibility, etc.) the ships were the best. It is thus clear from the subsequent questioning that while the search for the "right ship" was not given the emphasis in the liner companies that it was in the bulk companies, considerable time was nevertheless devoted to ship design.

Studies of competition and capacity data were generally restricted to the particular trade routes concerned, and were far less detailed and rigorous than those done by category 1 liner companies. In two cases these studies were done by the consortia, to which the companies belonged. Nevertheless, these studies of competition and capacity data, when coupled with further analysis of vessel costs,

often provided the real basis for decision making in category 2 liner companies. For example, one company carried out its analysis of entry into a consortium broadly as follows:

- (i) Estimates of potential trade flows on the liner route were obtained from the consortium.
- (ii) Estimates were then made of the trade share likely to be obtained or negotiated. This could then be converted into a figure for the volume of containers. When coupled with a figure for the expected freight rate (obtained from the consortium), broad estimates of revenues could be made.
- (iii) The next stage consisted of the identification of costs, broken down into variable costs and ship costs. Variable costs were identified as including port dues, costs of loading/unloading containers, inland costs, agency costs. A final figure was then expressed in terms of variable cost per container. Ship costs were then identified in terms of "slot costs" or feeder costs.
- (iv) A comparison of costs and revenues was then made to work out whether or not the trade share negotiated was profitable. If conditions were favourable the project would almost certainly be profitable. If conditions were unfavourable all members of this particular consortium would run at a loss.
- (v) In this particular company projects such as this were assessed over 7-10 years, occasionally longer. An NPV was calculated on the basis of the above.
- (vi) Cash profiles of the project were then carefully examined, particularly with regard to their impact on the company overall. Membership of a consortium provides obligations, and these were carefully ascertained in cash flow terms.

Few other companies carried out such complete analyses, but the first few points provide the basis for most decisions. More typically, estimates of revenues and costs were based upon current figures, which could then be converted into equivalent profitability estimates. Judgements could then be made as to likely changes in trade flows, market shares, and hence profitability, and a decision reached accordingly.

The different nature of liner shipping to bulk shipping probably accounted for the fact that no liner company in category 2 calculated break-even freight rates. The equivalent concept would probably be break-even utilisation rates. Certainly concerns with trade levels and expected changes therein were important, as was seen in the last paragraph. However, there was no evidence found that this was converted into break-even utilisation rates, or that these rates were an important part of the investment decision making process.

Concerns with liquidity were specifically identified in four of the six liner companies, and survival policies in a fifth company ensured careful consideration of all liquidity issues. In the sixth company it became apparent that the purse strings were held centrally by the owners, and managers in the shipping subsidiary were not aware of the liquidity position overall.

In the four cases referred to above the concerns were with the overall effect on corporate liquidity. Cash flow profiles were identified in one case as being of potential significance, as follows:

"We'd obviously have to look at the cash flow profile ... if it had very large outlays in the early years and all the benefits came late, that would have implications for the degree of risk that was inherent in it."

This same company also took the view that in the liner trades part of the necessary investment on certain routes was the *"funding of early losses"*. Only one of the six companies routinely worked through the effect of investment decisions into corporate profit and loss statements and Balance Sheets.

Overall rather less consistency existed with regard to project appraisal by this group, than for the companies in the bulk trades. For example, three of the companies stated that they would use NPV (amongst other things) as one of their appraisal methods. A fourth stated that none of the traditional appraisal methods had been used in the past but they probably would be for new investments. Discounting techniques were emphasised in this discussion. By comparison, the remaining two companies made it clear that none of these techniques were used. Indeed, in one of the companies the response was very dismissive of these techniques, as follows:

"We're not really interested in anything like that, that's splitting hairs. It must be a good opportunity."

Nevertheless, some summary can be made, which at the very least indicates the major areas of investigation and methods of analysis found in the liner companies, and provides an interesting comparison with the bulk companies.

- (i) Projects are likely to be assessed in relation to complete liner routes, or even membership of consortia, rather than single vessels.
- (ii) A certain amount of market analysis is likely to take place. This is likely to relate to such things as economic forecasts, trade volumes on particular routes, the potential for containerisation, and expected market shares. These aspects are likely to be covered in far more detail in the liner trades than the bulk trades. The study of supply/demand relationships for particular types of ship are not likely to be an important part of the analysis. (In certain cases, depending upon the trade routes under

consideration, it is likely that political considerations will be given some weight.)

(iii) The emphasis on finding the "right ship" is likely to be less in the liner trades than the bulk trades. Nevertheless, the identification of important ship characteristics is still likely to be an important, though secondary part of the analysis. It is likely that the more important characteristics will relate to cost effectiveness and potential flexibility, with the latter generally being less important than the former. This is because liner ships are usually dedicated to a particular trade, and must be amongst the cheapest to operate in that trade. Flexibility is more likely to be sought for less stable trade routes.

(iv) Competition and capacity data for the particular liner routes on which the companies operate are likely to be available in some detail, typically through membership of consortia and conferences. Little formal analysis is likely to occur in this area for category 2 companies.

(v) Considerable attention is likely to be devoted to the assessment of the impact of investment decisions on corporate cash flows.

4.5 The Specialist Companies

While two companies in category 2 were involved in specialist trades, only one provided detailed information on investment appraisal. In fact the cost of the specialist trades is so high that few private companies are likely to be able to afford to enter them. Most specialist companies are thus likely to be in category 1. In fact the company referred to above was one of the most sophisticated in category 2 and acted in many ways as a category 1 company. The main difference was in the degree of diversification achievable, which was somewhat less than category 1 companies. With regard to its planning and appraisal systems this company was undoubtedly the most sophisticated in its category. The essential parts of its planning system have already been described in section 3.2. Project appraisal was clearly set in this planning context, and was based upon the following points:

- (i) An identification of the strategic importance of the project
- (ii) Project description
- (iii) Project Financing
- (iv) An analysis of the Business Cycle

(v) Financial results for one ship - i.e. cash flow and profit and loss forecasts for three years, on both a standard and a pessimistic basis

(vi) Such addendum or exhibits as are considered necessary

Subsequent discussions made it clear that discounting techniques were used as part of the appraisal process. These calculations were based upon cash flows after financing for eight years. In fact the IRR calculations were based upon savings in operating costs, with a calculation then being made of the benefits (in NPV terms) of any subsidised finance available. Nevertheless, in spite of the reference to financial results for one ship in (v) above, it was clear that:

"... the appraisal was the class ..., then the number of ships, then the question of what does the financial structure amount to."

This was reinforced in subsequent discussions on the cost-effectiveness of certain ships, as follows:

"Having a collection of single ships ... it's difficult for maintenance, look at your spare parts problem. We'll have certain classes of ships will predominate on certain trade routes, and if you've got six ships of a class you know then that every other voyage is going to be an identical ship. So you can plan ahead, and your customer can plan ahead. You know that three months down the line you can carry your cargo because the system is coming along that'll do the same thing."

"One of the things on justifying these new ships - they're cheaper to operate. In other words, the point that we were trying to make ... was that given the same environment that you're going to be in, whether it's a more profitable environment or a loss environment, the ships themselves, on a transportation cost per ton, were cheaper, even though they cost more, ... than some of the older ships..."

Clearly this particular company analysed its projects, and planned its future in a very comprehensive way, with the analysis covering a whole range of factors. Interestingly, the experience or intuition factor mentioned earlier was also mentioned in this company, as follows:

"Gut feeling has a lot to do with things, but it's not a gut feeling that doesn't have a lot of study and analysis going on behind it."

5. Risk in Investment Decisions

5.1 Introduction and Summary of Findings

This section is concerned with identifying the ways in which companies in this category dealt with risk in the investment decision. Little new information was obtained as a result of further questions being asked specifically on risk. Risk appeared to be dealt with in a very general way, through broad policies concerned with the maintenance of a spread of interests/ activities, such things

as the acquisition of general purpose vessels, and conservative attitudes towards liquidity. Formalised systems for dealing with risk were almost non-existent for category 2 companies, as was the use of analytical methods for dealing with risk, other than sensitivity analysis.

5.2 General Approaches to Risk

Few companies in this category dealt with risk systematically. However, the section on philosophies and strategies should have made it apparent that some of the policies chosen were intended to reduce risk in some way or another. Particular areas of concern which were highlighted in that section, and which recurred in discussions on risk were:

- (i) The degree of exposure to a particular industry or sector of the industry in which the company was operating
- (ii) The risk associated with the purchase of particular ships
- (iii) Liquidity risk

As was pointed out in the section on philosophies and strategies, six of the 18 companies had a variety of interests, and clearly saw diversifications as an essential element of risk reduction. In two cases specific reference was also made to questions about whether the overall group could stand the risk associated with further investment into certain sectors of shipping. In both cases the answer was that it could, but there was a clear implication that there was a level of commitment beyond which they wouldn't go, since the risks to the entire group would become too great.

Other companies, even when confined to particular sectors of the market, attempted to reduce risk by careful balancing of such things as time charter periods. Most companies in the bulk sector would clearly have liked to obtain what one company described as *"a better balanced portfolio of usage"*, with rather more ships on longer term contracts and charters. Certainly there appears to be little doubt that historically risk has been systematically reduced by this method, with charter periods of five, ten or even 15 years not being unusual. The current market situation is very different, and while the balancing of charters is still an option, its effectiveness at present is somewhat more limited. Both the intent and the current limitations are captured in the following comment:

"What you try and do ... you want at least seven or eight ships to operate, and you try to set off one type of charter to another. You look at the time charter rates and you think, now, what can we afford to do. We'll put two ships on 12-18 months charter, running costs are covered and it's making a profit. That'll be our sort of

bread and butter for the next two years. And then you feel with the rest of the ships that you can play the spot market, still looking for chances to cover yourself."

At least two companies were actively looking for further diversification out of shipping to compensate for this reduced ability to balance out risk within the sector in which it was operating.

A decision to actually acquire vessels itself incurs certain risks. These risks increase as the degree of specialism of the vessels increase, since the selling price of a vessel will reflect its potential. A high cost specialist investment in shipping, which subsequently goes wrong, is likely to lead to a substantial loss in terms of both operating losses and capital losses. A more generally useful vessel, particularly one of a size which permits it to operate in a variety of geographical areas, and/or with self discharging gear for use in less developed parts, is far less likely to involve its owners in a substantial capital loss, even if operating losses are incurred. For category 2 companies, particularly those in the bulk trades, risk reduction by the purchase of handy sized, flexible ships, with low operating costs, was a common solution to a difficult problem. For the bulk trades this may be a reasonable approach. In the liner trades there is likely to be some conflict between being low cost and also having the minimum risk. Only one of the liner companies had given considerable thought to risk reduction in this area. It had decided that under current market conditions the risks involved with the acquisition of vessels were too great, and a decision to charter in needed tonnage had been made. This policy had been applied to other factors as well, as can be seen from the following:

"I think we would do everything we could to minimise risk while at the same time trying to be a low cost carrier, and that has tended to mean that we are buying in many more supplies from the outside market, because one can then vary the volume of those supplies more easily than if you have set up self supply."

Under certain circumstances, notably where there was a commitment to provide tonnage under a successful consortium agreement, this company might still consider acquisition of vessels. However, as is evidenced by the following comment, the degree of risk associated with such a venture is still perceived to be high.

"Where it becomes clear that a particular ship size is appropriate ... then it might be right. But then again, when one looks at ... what has been recently done, ordering ships of 4,000 TEU capacity, one has to constantly ask oneself whether the accepted economic relationships that exist today, about the size of the ship, and the cost per TEU of that ship, will be appropriate in the future. We've seen that if you have a 4,000 TEU ship, purchased in today's market, with today's low steel prices, today's overcapacity in shipyards, with today's cheap containers, which are half the price of what a container would have cost 10 years ago, that someone can provide a container slot at a fraction of the capital cost that was provided a few years ago."

The concerns with liquidity have been identified earlier, with the result that more emphasis is

being placed on liquidity in appraisal and planning. Having said that, few companies seemed to have any policies for incorporating liquidity aspects into either the measurement of risk or its reduction. Only three companies seemed to have specific liquidity risk criteria in their appraisals, or to have changed their policies to reflect changed concerns with liquidity risk. In one case specific cash ratios and levels were required at all times, and these were incorporated into the analysis. In a second cash flow profiles were examined in terms of their implications for risk. In the third case repayments had been changed to an annuity basis, and more was being borrowed on new assets than was really needed. The idea was to leave the company's own cash for other things, in effect, to create a greater cushion in the event of liquidity problems. A small number of other companies made subjective judgements about the degree of liquidity risk involved, and whether they could stand it.

At least seven of the 18 companies appear not to have formally considered any aspect of risk in their investment decisions. However, in at least four of these cases the companies considered that they were conservative in attitude anyway, so their decisions were based upon the pessimistic side, rather than the optimistic side. In other words, risks were sometimes simply not perceived as real at the outset of a project. Subsequent experience has indicated that this was an error of judgement. What is less clear is whether or not attitudes have been changed by such experiences. The following observation from a senior official in one company indicates the tremendous practical difficulties with regard to ex ante assessments of the degree of risk inherent in a project.

"Our cash flows, even though we make them representative of what we expect the market to do, invariably are representations of the current environment. Because when you're in a bad market and you say, 'Well, I'd better be a little bit optimistic', what you consider optimistic is just peanuts compared in fact to what it's going to be, and equally, in a good market when you say you'll be pessimistic, it's just peanuts in relation to what it ends up being. It is extremely hard to accept the tremendous volatility that exists."

The final area, and one of the few in which some consistency did arise, was the area of currency risk. All eight British companies were extremely conscious of currency risk, and avoided it where possible. In general the attitude was that the currency market was not for "playing" in, since the companies involved did not have currency "experts". (The fact that several companies commented that currency exchange losses are not allowable, whereas exchange rate gains were, suggests that this might also have been a factor.) British companies tried to *"balance their books"* in currency terms. Wherever possible currency risk was eliminated by hedging, or refinancing in US dollars (the currency in which most revenues were earned – even by British companies). In most, but unfortunately

not all, cases, yen loans were re-financed in sterling or US dollars.

The American companies did not see currency fluctuations as quite such a problem, since, as was mentioned above, US dollars are the main currency in which shipping business is transacted. In five cases currency risk was not perceived as a relevant problem, though in one of these the point was made that currency risk simply would not be taken. The other five companies all expressed some concern with currency risk, although the degree of concern was variable. Two companies incorporated some sort of analysis of potential currency fluctuations in their investment appraisals, although in one of these there was no attempt to actually forecast likely movements, but rather to assess the sensitivity of projects to changes in certain exchange rates. Three companies had hedged, particularly when purchasing ships in yen. One company saw currency fluctuations as a *"big concern"*, but still did not hedge, adopting a *"win some, lose some"* philosophy.

5.3 Analytical approaches to risk

The only analytical approach to risk which was used by companies in category 2 was sensitivity analysis. However, even this technique was only used in six companies, with sensitivities being calculated for:

- (i) Trade volumes (1 company)
- (ii) Freight rates (1 company)
- (iii) Cost escalation/inflation rates (3 companies)
- (iv) Residual values (1 company)
- (v) Exchange rates (2 companies)

6 Financing Aspects of Investment Decisions

6.1 Introduction and Summary of Findings

Of the 18 companies in this category, only 17 answered questions on financing aspects of decisions. In a small number of cases it was clear that the staff discussing the decisions were more concerned with the investment aspects of the decision than the financing aspects. This is particularly true of the sections on capital structure. Attention will be drawn to the reduction in the sample where

appropriate.

In general, it was found that the financing decision was an important part of the overall decision. In a significant number of cases the investment and financing decisions were seen as being integrated parts of the overall decision. Financial arrangements clearly influenced the choice of shipbuilders in a majority of cases.

Questions on methods of finance revealed a heavy reliance on loan finance, with substantially longer periods of loan being available in the United States under Title XI finance. (20-25 years as compared with 8-12 with yard credit or bank loans.) Security required followed fairly consistent patterns.

Questions on capital structure revealed that it was regarded more as a figure resulting from other decisions than as something which could or should be optimised per se. Only one company had a target debt/equity ratio. Several others either saw some kind of self imposed limit to debt, or a practical limitation related to security and the satisfying of bank covenants, as being more appropriate. Concerns did exist with regard to overall levels of debt, but these related more to problems of debt service and related liquidity issues.

6.2 Relationship between the Investment and Financing Decisions

It has already been pointed out that under a fairly restrictive set of assumptions finance theory suggests that investment decisions should be made prior to, and separate from, financing decisions. It has further been pointed out that a departure from such assumptions will lead to adjustments to the above idea becoming necessary, (e.g. where benefits arise from subsidised credit). Some doubts also exist about the general acceptability of the ideas on separation.

Given the fact that shareholders' wealth maximisation is a more difficult problem for private companies, and that these make up the majority of companies in category 2, plus the fact that asset specific finance is relatively easily available (at least for new ships), the question of the relationship between the investment and financing aspects of decisions appears valid. Certainly the method of incorporating the benefits of subsidised credit into investment decisions requires clarification.

A specific question was thus asked, as follows: Are decisions to acquire vessels made prior to consideration of how the vessels are to be financed? Sixteen of the 18 companies in category 2

provided answers. However, as with many of the previous questions answers were often not clear cut yes/no answers. Eight of the 16 companies could be said to have answered yes, implying a separation of investment and financing. However, of these eight, five had made a clear presumption that Title XI finance was available, at a rate which was competitive at the time the loan was taken out, and for a long period, typically 20-25 years. Two of the other companies kept the investment decision separate, and considered it first, on the grounds that they could always finance a project. The final company of the eight made it clear that while the investment decision was paramount, they would have a very clear idea where the cash was coming from, and would be running a study on the best financing method in parallel with the study of the investment decision. Further discussion with the companies relying on Title XI made it clear that the availability of this finance was crucial to the final decisions to invest in new vessels. It is only because of the high degree of confidence these companies have that finance will be available under favourable conditions that the financing aspects of the decision are given such low priority. Of the other eight companies responding to this question, six regarded the investment and financing aspects as being integrated parts of the decision. In two of these cases however, an investment analysis was done prior to combining the two aspects. In one of these the decision on acquisition came first, followed by decisions on the timing of the project, and how it was to be funded, with an overall decision resulting. In the other, initial calculations on the investment, based upon expected charter revenues, would be calculated before integration with the figures reflecting the different financing possibilities. In the remaining two of the 16 companies the investment and financing aspects, if not formally integrated, were certainly seen as being closely linked. In one case the financing conditions available resulted in a substantial investment actually being made, with very little clear idea existing of the exact use to which the vessels purchased would be put.

Overall, a substantial proportion of the companies in this category regarded the financing decision as an important part of project appraisal. Certainly if the companies relying on Title XI finance were forced to go elsewhere in the market, only two or three of the 16 companies answering questions in this area were likely to actually make investment decisions without serious consideration of the necessary financing. As will be seen later finance tends to be raised in asset related "chunks", which tends to reinforce the importance of financing as part of project analysis. This is not to say that

an overall approach to financing is not also taken, merely to point out that in fact the investment and financing decisions are by no means completely separate.

In the course of the interviews a specific question was asked as to whether the choice of shipbuilder had been influenced by the financial arrangements. Answers were obtained in 14 cases. Nine of these answered yes, although emphasis was effectively given to the word "influenced". In only one of these cases was a decision basically made because of the financial arrangements. In all of the others the financial arrangements influenced the choice of shipbuilder, but as part of a range of considerations. These generally included ship specification, quality/reputation of the yard, price, financial conditions, and credit available. One company pointed out that the financial arrangements, while influencing the country in which the ship was to be built, would not influence the choice of specific yard, since credit terms were often standard across the country of building. Five companies considered that the financial arrangements did not influence the choice of shipbuilder. In three of these cases this was because Title XI finance was available anyway. In the other two companies the critical features were size and quality of ship, delivery date, and price.

6.3 Methods of Finance

Seventeen of the 18 companies in category 2 answered questions on this area. In only three of these cases was additional equity (excluding increases in retentions) put into the company to assist in financing projects. In one of these cases (a public company) a rights issue was made, while in the other two some equity (though in relatively small amounts) was put in by new partners in individual projects. For example, one company had sold an 8/64 share in one of the vessels it acquired to what was described as "*a friend*", not currently involved in shipping. Such amounts, while not insignificant sums on a vessel costing \$20M, are still relatively trivial with regard to the industry needs overall. In fact, the raising of new equity was not perceived as a realistic option by many companies, since they could not offer sufficiently high profits to compensate for the perceived risks in an industry with the volatility that shipping has. Only two other companies had even considered the possibility of further equity. In one of these cases this remains a possibility. In the other it has been shelved for the moment because of poor results, but might be considered again in the future, possibly as an issue on the Unlisted

Securities Market. Very few of the private companies were in a position to obtain substantial sums of new equity without going public and hence potentially changing the controlling group. In only one of the private companies in this category was this mentioned as a possibility.

The net result of this is that the equity contribution to project financing was generally confined to retentions. However, as is evident from subsequent discussions, the amount of this contribution was relatively small.

In fact, the majority of funding for new projects came from loan finance, with the typical proportion funded in this manner being 60-90% for new vessels. Nine of the companies had funded projects using loans linked to shipbuilding contracts. Five others had used Title XI and/or capital construction fund finance. Another had used a long term financial lease, providing 100% financing, principally because of cumulative losses, after a lease/buy analysis had been done. One company which had used yard credit later also used financial leases, since the 30% equity contribution implicit in Japanese yard credit at that time, was still too much for the company to put in. One of the companies which had used yard credit made it clear that it was more usual to use commercial bank credit. Five companies using yard credit or Title XI finance obtained further top-up funds from commercial banks, thus enabling them to fund projects up to between 90% and 100% from the two sources of debt finance. Two companies adopted a flexible approach, and had used a variety of sources of finance, depending upon the current financial position of the company, and the currency in which business was to be transacted.

It is clear from these results that a very heavy reliance is placed upon debt finance. In only one case was it made clear that debt finance was used only because of the subsidy available. This company, which was extremely rich, had actually paid cash for investments up to 1970. Since then it had used subsidised credit *'simply because of the cost'*. The emphasis on debt finance in the others goes some way towards explaining the perceived link between the investment and financing decisions discussed in the previous section.

Questions were also asked about alternative sources of finance which had been, or might be, considered. Only two alternatives were of significance, namely chartering and leasing. The chartering of vessels was seen as a way of obtaining the use of vessels for a certain period, for a prescribed cost. Under present market conditions the emphasis tends to be on short and medium term periods. Financial leasing generally relates to longer term periods, usually close to the physical or economic life

of the asset being funded. Twelve of the 17 companies in the sample had seriously considered the use of chartering or leasing, although only two had actually used it. Eight of these 12 cited tax as one of the major reasons for considering leasing. Four companies made reference to the length of time for which funding could effectively be obtained. In general, leasing periods were longer than those achievable with shipyard credit and commercial bank credit. Only with Title XI was this not the case. Leasing was thus more likely to be used by a British company than an American one, since it was a way of bringing the period of funding more in line with the period of expected use for a vessel. Other reasons put forward for the use of leasing related to cash flow profiles and the current financial position of the company (though this latter point is clearly closely related to the tax position referred to earlier).

By contrast, five companies expressed strong views against the use of leasing, with phrases being used such as *"it's just not done"*, *"it's not really our business"* and *"leasing is a heavy load, we're not happy with it"*. Subsequent discussion made it clear that the main objection was the loss of flexibility that resulted in terms of disposal of the assets. The conditions associated with getting out of a lease were generally onerous. For a company wishing to utilise the sale and purchase market at opportune moments such conditions are undesirable. In such cases leasing is likely to be seen as imposing significant constraints on a company's freedom of action, and is likely to be rejected in favour of other forms of funding. At least two of the 12 companies which had considered leasing, rejected it for the above reason.

Specific questions were then asked about the period for which loans were normally obtained, and whether or not companies would normally take up the maximum possible under the loan agreement. Eleven of the 17 companies stated that they would take up the maximum loan possible for the purchase of new vessels. (So few companies in this category purchased second hand vessels that analysis with regard to such vessels was relatively meaningless.) It is perhaps worth noting that one of the companies qualified its answer by saying that it would normally include a provision in its loan contracts, permitting early repayment without penalty. One company leased assets, obtaining 100% funding over a longer period than would have been possible using debt finance. Responses from the other five companies, while all negative, were generally qualified in some way. In three cases the decision as to the proportion of funds to be provided from loan depended on a variety of things, such as the currency of the loan, current and anticipated interest rates, current financial resources of the company, etc. In the remaining two cases a conservative attitude towards borrowing appeared to

exist, with one company saying that it would not borrow to fund new assets if it had the money to pay for them outright. However, in practice in all five cases where companies said that they would not normally borrow the maximum amounts possible to fund new assets, substantial amounts had actually been borrowed.

The period of loans varied somewhat. Yard credit was typically available, usually at a subsidised interest rate, for periods from 7-10 years, with 12-15 years being obtained in a small number of cases. Commercial bank loans, which were not subsidised, were typically available for maximum periods of 8-10 years. Title XI finance, at US government rates of interest, was usually obtained for 20-25 years.

The proportion of cost for which loans could typically be obtained was 60-90% yard credit (occasionally 100%), 75-87.5% for Title XI finance, and 50-70% for commercial bank loans. These figures could often be extended by the use of "top-up" and/or "stretch" facilities from the commercial banks. Moratoria on early-year payments and/or the use of balloons at the end of the loan period could often be obtained.

6.4 Security

An extremely high degree of consistency was found across the companies in this category with regard to security given for loans. Almost all companies had first mortgages on vessels, and a number of restrictive covenants of the type set out in chapter 6 on banks. A commonly required covenant was one relating the current market value to debt outstanding, with minimum figures of 120% to 150% being quoted as required. Parent or group guarantees were also frequently given, although some companies attempted to resist these. Cross collateral was often given from other unencumbered vessels in the fleet.

6.5 Capital Structure

Two separate questions were asked in an attempt to establish views on the extent to which debt finance could be used overall, rather than simply in relation to individual projects. Companies were thus asked:

- (i) Is there a limit to the total amount of debt taken up?

(ii) Do you work towards the achievement of a particular long run capital structure which is broadly adhered to over time?

If specific limits or targets did exist, companies were asked to state what they were, and to give a rationale for their choice. Answers were obtained from 16 companies.

Five of the 16 companies stated that there was a limit to the total amount of debt taken up. In one case debt was actually limited by the articles to twice capital plus reserves. Steps were being taken to move this up to three times. Subsequent discussions with this company made it clear that the company was less concerned with gearing than with its ability to pay debts. It clearly also regarded "snapshot" pictures as very misleading, with the long term picture being much more important. Nevertheless, it *"get(s) worried if the gearing is too high"*, principally because of concerns about the interest rate risk, particularly when loans were LIBOR related. A second company also referred to interest rate risk as the main reason for limiting debt, but also pointed to the problem of providing adequate additional security if debt became too high. The three other companies which stated that a limit existed all gave a debt/equity limit of 1:1 (or 50% assuming debt/debt + equity). In the first of these it was pointed out that gearing was *"not an issue"*. A 50% figure was a probable maximum, but the current figure was only 25%, and that was the highest ever. The debt/equity ratio was *"just a figure that turns up"*. There clearly was no target, and the limit was somewhat hypothetical. In one case a 1:1 ratio was *"about right, as a matter of judgement"*. In the final case, while the company would react to changes in its financial position, it would not wish debt to exceed equity.

Subsequent discussions made it apparent that practical limitations existed with regard to borrowing, irrespective of any self-imposed limits. Adequate security needs to be available before further loans will be made available. Three companies pointed out that covenants in loan agreements effectively set upper limits to the amount of debt, and that this was a significant factor in resultant debt/equity ratios. The main covenant cited in this context related the current market value of assets to debt outstanding, with figures of 120-150% being common. The current market values of assets (which in turn are closely related to earnings potential) represents the first line of security in many cases, so levels of debt are likely to be constrained by these values. This was implicit in most

discussions, even if not formally specified as in the three cases above.

With regard to the second question, concerning target capital structures, only two companies had particular target figures in mind. In one case this target rate was 50% (based upon debt/debt + equity), though in fact new buildings were pushing this figure higher than the company considered desirable, since the company was currently taking out maximum loans for safety (in liquidity terms). In the other case an objective of equity being twice the debt existed, but in reality the actual level of debt exceeded that desired. In the remaining 14 companies no target capital structure existed. Actual debt/equity ratios could only be calculated for seven of the companies in category 2. These are given in table 20.

Company	1978	1979	1980	1981	1982
Ellerman	36%	37%	36%	27%	25%
Lyle	32%	17%	7%	24%	45%
Hogarth			25%	47%	
Waterman				88%	95%
LOF	45%	35%	27%	25%	23%
Reardon Smith	73%		60%	55%	49%
Irish Shipping	53%	44%	35%	27%	35%

Table 20 Debt equity ratios - category 2 companies

These figures, while not giving away very much information, do display considerably more changes over time than found in category 1 companies, and provide reinforcement to the above findings. By 1984 the ratios for both Lyle and Irish shipping were very much higher than those shown in 1982 (98% and 87% respectively). Rearden Smith has ceased trading.

This is not to say that no concerns existed with regard to capital structure or overall levels of debt. In fact only one of the 16 companies was not concerned in some way with overall levels of debt. This particular company, which has already been referred to as an exception in earlier sections, did not see its overall Balance Sheet as the basis for borrowing. Because individual vessels were treated as separate companies, concerns with debt on individual vessels was seen as the relevant cause for concern. In practice, capital structure per se was seldom an issue. Most companies were more

concerned with their ability to service debt, than the level of debt as such. This in turn is affected by market conditions, covering such things as general economic conditions, the state of world trade, the supply of and demand for shipping services, the nature of the shipping/business cycle, and current and expected interest rates. It should be noted that shipping is perceived as a somewhat volatile industry, with relatively low quality earnings. Several companies followed this thinking through into very conservative attitudes towards debt/equity ratios, principally because of this inherent volatility in the industry. One company had, until very recently, no debt at all, and regarded this as one of the reasons for its past success. A significant factor in discussions on capital structure, closely related to the above, was the nature of the earnings expected. Earnings related to a long term charter or contract of affreightment are thus far more supportive of high debt than those expected from a bulk carrier trading on the spot market.

In most companies the actual capital structure was the result of a balanced approach to issues such as those given above. In other words, particular capital structures were not an end in themselves. They were basically the end product after consideration of factors such as those referred to above. For example, one company, having said that its debt/equity ratio would tend to be about 50%, went on to point out that this was not really a target or a maximum figure. It was something looked at by the Board from time to time. It was certainly not an inhibiting factor, it was rather something you keep in mind, something you live with. 50% was not a bad yardstick. However, if the company were buying a fair number of large vessels with long term contracts there would be no problem in raising the debt/equity ratio.

In considering views on capital structure the earlier comments on liquidity need to be borne in mind. Of the 16 companies answering questions on this section, 13 conducted thorough analyses of the liquidity aspects of their plans. As a minimum these analyses identified debt service commitments for some time ahead. The calculation of break-even rates in most of the companies involved in the bulk trades further emphasises the importance given to an ability to service debt (particularly if one remembers that break-even rates were usually cash flow rates, covering debt service and operating costs).

Given this perceived link between capital structure and ability to service debt, questions were asked as to whether any other accounting oriented ratios were calculated and kept at certain minimum levels. Particular questions were asked about interest coverage and cash adequacy, and companies

were asked to identify any other ratios considered particularly important. In the majority of cases (nine from 16) no further formal analysis or ratio requirements were found, with the previous emphasis on cash flows and ability to service debt being pointed to. Where such ratios were calculated they indicated, as had been expected, concerns with cash adequacy and interest coverage. Four companies paid considerable attention to interest coverage, although in one of these cases concerns were wider, and covered fixed charges in a broader sense. In one of these, this idea was extended into a ratio of operating flows (net profit + depreciation) to debt service, to ensure that the former is likely to exceed the latter. Five companies made supportive calculations and comments concerning cash adequacy. These ranged from estimates of the minimum working capital needed at all times to keep a fleet of five or six ships in operation, to more global estimates of the amount needed to see the company through the low cycle associated with building and implementation of a new programme. Several companies kept a close watch on the relationship between the current market value of assets and debt, though in most of these cases the reason was partly attributable to the existence of a covenant regarding this in the loan agreement, referred to above.

In considering the overall level of debt, due consideration needs to be given to the previous discussions, in the section on philosophies and strategies, about the commitment of most category 2 companies to the industry, or to sections of it. A commitment to an industry of this type requires periodic major investments. The costs of these in shipping are so enormous that few companies could afford them without recourse to borrowing. There is thus a clear need to borrow, which has to be balanced against the risks associated with borrowing, which in turn translates into ensuring an ability to service debt in a volatile industry. High borrowing on individual projects is, of course, perfectly consistent with lower overall gearing levels, given the naturally self liquidating nature of most shipping loans.

An interesting by product of the discussions on capital structure concerns the cost of debt. In the course of the discussions it became clear that the cost of debt bore little relationship to the amount borrowed, a point which has been made already in the chapter on banks. With yard credit or Title XI finance very high proportions could be borrowed at relatively low rates. Spreads on bank loans were low, and did not appear to vary much with the amount of finance raised. "Top up" finance was generally more expensive than yard credit or Title XI finance, so some slight increase in the cost of borrowing occurred at higher levels of gearing for companies using such a facility. However, this appeared to

reflect the difference between subsidised and commercial rates, rather than a risk premium. Interestingly the interest part of the costs of leasing, which was effectively 100% financing, was no higher than that associated with lower levels of debt. The overall conclusions of this must therefore be that the cost of debt does not rise significantly, if at all, as the level of debt increases. However, given the earlier comments on practical limitations imposed by the need for adequate security, it is likely that difficulties would arise with regard to actually obtaining the debt needed to push up gearing to extremely high levels.

The final question asked in this area related to the impact of gearing on share price. Seventeen of the 18 companies provided answers to the question: "In considering the level of debt, do you attempt to assess the impact of changes therein on the value of ordinary shares - in general terms - or in a quantified way?" One answered "Yes" - in general terms, and went on to explain this by reference to the amount of time the Board spent on discussions of dividend policy. Interestingly, this company was not a public company. No other company made any attempt to relate levels of debt to share price.

6.6 Financing - an illustration

The following summarised comments, relating to one specific company in the study, are included to illustrate the kind of thinking which goes on with regard to the financing of projects. Some comments on the individual project appraisal are incorporated to clarify the link between investment and financing.

On individual project appraisal, figures would be calculated relating to break-even freight rates and accounting rates of return. The implications of the project would then be built into cash flow forecasts for the company, covering the next five years. This last process was considered to be crucial. Following this, the Balance Sheet and cash flow implications of the project would be worked through. In particular this would include the calculation of future ratios for such things as fixed charge coverage, debt/equity ratios, debt coverage (i.e. current market value of the fleet/debt) and similar ratios. Calculations of this sort were considered to be *"the key to survival"*. The most important ratios were probably:

- (i) debt as a percentage of current market value of the assets
- (ii) cash as a percentage of debt, and
- (iii) a cash coverage of fixed charges ratio, namely the number of years of interest and principal

repayments that the cash represents.

No hard and fast rules could be laid down for these ratios. Indeed, the company pointed out that we are now seeing *"very conservative ratios 18 months ago are proving to be hideously overextended today"*. However, the company would usually like to have sufficient cash (or equivalents) to cover two years debt and interest payments (in a moderate market situation). The more volatile market which existed in shipping today had led to a much more conservative approach than had been taken in the past.

In reaching an investment decision the company would have a fairly clear idea how the acquisition was to be financed, because sufficient cash would not usually be available to finance the entire acquisition. Hence, while the investment and financing decisions are strictly separate, there is a very close link between them, of a rather stronger nature than one might expect in manufacturing industries.

Typically vessels would be financed from shipyard or export credit to the maximum amount possible. The proportion varied according to market conditions but was normally 60-80% of cost. The balance of the cost was usually funded internally. The currency of the loan, and its relative strength or weakness, would also be carefully considered. US dollars was the preferred currency to buy in, because the majority of earnings are in this currency, and exchange risk would be virtually eliminated. The proportion of debt taken up on new vessels was usually high. However, the final decision as to the amount of loan taken up, and hence on overall capital structure, depended upon the circumstances prevailing at the time, with detailed consideration being given to both liquidity considerations, and to the ratios, referred to above. Criteria were laid down for all of these ratios, which had to be met, but generally liquidity considerations were given more weight than anything else. It was pointed out that a new vessel would be carrying a higher proportion of debt than existing vessels, earnings from which also provide support for the debt. While legally the debt may relate to one ship, it would be taken because there were other vessels which were unencumbered or encumbered rather lightly. It was clear from the financial accounts that no target debt/equity ratio existed as regards the historic cost accounts. Even using debt/current market value of assets, no particular targets were set, but broad guidelines are borne in mind. Given the volatility of the industry this ratio should not prudently be more than 60% in a low market coming down to something like 30% in a high market. Reservations existed with regard to giving such "off the cuff" figures, since, for example:

"60% leverage on a VLCC with zero prospect of trading for the next three or four years is very different from 30% leverage on a products carrier of 30,000 tons ... You're not dealing with just ratios. You've got to look at the total picture of what you're dealing with."

The period of loan taken out was normally 8-10 years, for new vessels, with second hand vessels being slightly shorter. The decision as to where to go for a new vessel depended on the specification of the ship, the standards of the builders, the price, the financial conditions, and the credit available. For example, for ships ordered in Japan all the constructional finance is usually included in the price, while for those ordered in many other countries the finance during construction is an additional cost. *"All these things must be taken into consideration when evaluating different projects."*

The use of leasing as an alternative to loans had been considered. The view was held within the company that this could be a valuable vehicle for a British Company, since it was perceived as a way of adding to the term of the debt, or of increasing overall debt capacity. The company, which was fairly conservative, has never really wanted these advantages, and has not actually financed vessels by leasing. The main problem however, relates to the constraints on disposal typically built into leasing contracts. Given the earlier comments about the need to respond to the market, including trading in ships, such restrictions were not considered acceptable, because of their effect on the company's freedom of action.

Further equity other than through retentions, had not been seriously considered. This was because shipping companies cannot provide good profit forecasts, thus making market issues extremely difficult. Equity partnerships were felt to provide more trouble than they are worth, unless they bring in more expertise. Hence new vessels were financed almost entirely from loan and retentions.

Approximately 50% of cost was normally available secured on a first mortgage of the vessel. Additional amounts would normally be secured either by a bank guarantee (which in turn could be secured by other collateral), or by mortgages on other ships. Export credit agencies generally required bank guarantees. Bankers generally required other mortgages.

Chapter 10

Category 3 Companies

Small and "Entrepreneurial" Companies

1. Introduction to the Category

Category 3 consists of a number of companies, which did not fit either of the other two categories, either because of size, behaviour, or nationality. It was intended to include a selection of smaller companies involved in shipping (accepting that the sheer cost of individual vessels means that a "small" company is still likely to control assets running into the equivalent of several million pounds). Equally important, however, in establishing the need for a further category, was the fact that certain companies displayed quite different behavioural characteristics, behaving in what category 1 and 2 companies often described as an "entrepreneurial" manner. A common belief was that this behaviour was typified by the Greeks in the industry. Subsequent discussions made it clear that a number of British and American companies operated along broadly similar lines. As a result the sample includes 15 companies, of which five were British, four were London Greeks, two were American, three were New York Greeks, and one was the American agent for a Panamanian Company. All but one of these companies were private companies.

As was pointed out in the pilot study, discussions with these companies (with some notable exceptions) tended to be rather more broadly based than those with companies in the other two categories. There was a tendency for questions to be answered with broad generalisations, about what for example, the typical Greek or entrepreneurial owner did, rather than with specific answers about exactly what a particular company did. This was further complicated by the fact that a number of the companies with which discussions were held were in fact, agency companies, in strict legal terms.

Published information with regard to these companies was also extremely limited, with financial accounts only being obtained in two cases. In general, companies were simply not prepared to disclose as much detail as companies in other categories. This is not intended to imply any kind of criticism. Rather it reflects the fact that almost all of the companies were closely held, often by families, and owners, not unreasonably, did not wish too much intrusion into their private affairs. Interviews were thus approached by the companies with more caution. Having said that, very few companies refused totally to discuss things, and all those who did participate were very helpful, if sometimes discreet.

The overall effect of these points is inevitably that conclusions reached are more tentative than those for the other two categories. However, as a counterweight to this, the approach to decision making was generally less sophisticated (though not necessarily less effective), and certainly less complicated.

2. Aims and Objectives

2.1 Introduction and Summary of Findings

The pilot study had suggested that objectives to do with wealth maximisation and fleet maintenance and expansion were more important than other objectives. Thirteen of the 15 companies discussed their objectives in some detail, though, as with the other categories, they were not always clear. The fact that most companies in this category were controlled by families or even individuals posed a particular problem, since it tended to result in objectives being implicit, and somewhat personal. In at least six of the companies in this category decisions were made by one or two individuals, and their thinking was not always clear to others in the company. For example, the Chief Accountant in one company made the following observation on the owner:

"In his mind he knows where the company wants to go, but I don't know what his mind is."

Under these circumstances it was not possible to identify the nature of personal objectives with regard to companies in this category. It needs to be recognised however, that these kinds of objectives have considerable potential for influencing corporate objectives for category 3 companies.

For purposes of consistency with other categories, questions were asked about objectives to do with share price maximisation, and dividends. Responses with regards to dividends enabled no conclusions to be drawn, other than that category 3 companies apparently did not see dividends as a major constraint or objective. With regard to share price maximisation a clear view did emerge. Share price maximisation was explicitly rejected as an objective in 12 of the 13 companies, with the thirteenth substituting the objective *"a broad consideration of wealth"*. Answers on this point were so emphatic that there seemed to be no point in having a separate section specifically discussing this further.

In spite of these caveats and difficulties, objectives were found to exist in a significant number of companies, in two main areas, even if in a relatively informal or implicit way.

- (i) objectives related to profitability and/or wealth
- (ii) objectives related to continuing in business.

These objectives follow fairly closely those identified in the pilot study. However, inevitably differences of emphasis were found, and these are discussed in more detail below.

2.2 Objectives to do with Profitability

Not altogether surprisingly, objectives to do with profitability were found to be important. Eight of the 13 companies specifically emphasised such objectives, though only one specified profit maximisation as an objective. Subsequent discussions with this company made it clear that profit was a long term concept, and the emphasis was on maximising profit (as an increase in wealth) over time, rather than with maximising it for particular periods. In the other seven companies concerns with profitability were expressed in different ways, ranging from general comments such as:

"We try to do the best we can."

"We try to be as profitable as we can."

to rather more specific comments about required profit levels. One company specified an objective of a 20% return and a 20% growth rate for the broking part of its business, which was now becoming much more significant, given the volatility and problems associated with the shipping industry per se. Another tried to keep an overall annual return of 15-20%. However, it emphasised that this return should be viewed as a long term average, rather than a required return for individual years. Two of the

remaining companies in the eight made general comments about the search for profits. The final company, having made the point that there were profitability objectives, then went on to discuss their approach in more detail. This particular company, in common with a number of others, as will be discussed later, considered that more money could be made by buying and selling ships than by trading with them. They therefore had the aim of operating without making a loss, but then making as much profit as possible through buying and selling, when the market was right.

The fact that five companies did not emphasise profits in discussing their objectives should not be taken to mean that profit was unimportant. For example, in one company the point was made that no profit or growth targets were formalised, with the result that such things as return on capital weren't ever discussed. In fact, this particular company was extremely profitable, but other factors were given more weight in discussions, with an implicit assumption that these other factors have some degree of correlation with profitability. In another the comment was made that *"...we are happy with what we get"*, reflecting a feeling that while profitability is important in the long term, market conditions in shipping are such that profits in the short term may not be too wonderful.

2.3 Objectives to do with Continuity

The second objective (or set of related objectives) that was found to be common, was based upon a desire to actually continue in business, often in the same business. In some cases this idea of continuity was expansion oriented, while in others it related more to maintenance or replacement. In almost all of the companies in this category, owners (whether individual or family) had been in the business for a long time, and wished to continue in it. Five of the 13 companies specifically identified a desire to continue in the business, with comments such as:

"Requirement number one is to exist and maintain yourself. To expand is an option."

A further three made statements implying the same kind of commitment to remain in the business, but specifically said that they were aiming for growth, a point which will be returned to in section 3.4. Two more companies make observations about commitments to replace existing vessels, in such a way as to imply a fairly strong desire to continue in their existing businesses.

The desire to continue in business, particularly when that business is shipping, is in some senses in conflict with profitability objectives. As will be seen, most companies in this category did not feel

able to influence the market in any significant way, and were thus at its mercy. Clearly, profits will be made whenever possible, but there may be substantial periods of time when returns are poor or non-existent. This may explain the ambivalence which seemed to exist with regard to profitability objectives.

2.4 Other objectives

While only one of the companies specifically identified concerns with owners' wealth in the discussions on objectives, further discussion of philosophy and strategy with regard to investment decisions did suggest that considerable agreement would have existed with an objective couched in terms of at least maintaining owners' wealth, while remaining in an interesting business which provides periodic opportunities for substantial increases in that wealth. Such an implicit objective is consistent with the discussions in approximately two thirds of the companies in this category.

Apart from the broad objectives discussed above, a number of particular objectives were discussed in certain individual companies, mostly reflecting the personality of the individual or group making the more important decisions. For example, the chairman of one company commented that he had thoroughly enjoyed his time in the City, that the business provided the family with as much income as they wanted, and that he thus wanted to ensure that the same opportunity should be available to someone else. Considerable emphasis was thus placed on ensuring that the business continued. In fact this company was currently growing, but further concerns were expressed about too rapid growth.

"We wish to grow as big as we can without changing the nature of the company. Getting too big results in a change in the character of the company."

The objectives in this case might include:

- (i) enjoyment (*"amusement"* was the word used)
- (ii) an adequate income
- (iii) the maintenance of a business with certain perceived desirable characteristics

This latter point can also be related to earlier comments on continuation, expansion and replacement. In the course of the discussions it became clear that approximately half of the businesses did not envisage growing beyond a certain size, because to do so would change the way they did business. This was seen as important. For example, one company discussed its desire to maintain its present *"style and tradition"*, feeling that it had *"a reputation for being quite good"*

chaps". It wanted *"to be as good as it can be in terms of moral stature"*. This translated into concerns with consolidating its reputation, and with specific safety and crew policies.

Overall, while the objectives were generally ill-defined, they followed the above broad patterns. Given the nature of the companies, and the close involvement of owners in decision making, this lack of definition is not surprising. In these circumstances, the need for clearly defined objectives is less than in companies in the other two categories. Nevertheless, when linked with the philosophies and strategies adopted, the approach becomes much clearer and more consistent.

3. Philosophies and Strategies

3.1 Introduction and Summary of Findings

The philosophies, strategies and activities of the companies in category 3 displayed considerable consistency, and also tended to be inter-related to a much greater extent than those found in the other two categories. The same broad headings are used, as far as is possible, as for the other two categories, but it perhaps needs to be emphasised that such a subdivision has an element of artificiality about it.

In the main, the strategies adopted tend to follow from the line of business in which most category 3 companies operated. The more important philosophies, strategies and activities found were as follows:

- (i) Limited diversification had taken place, with the majority of companies having substantial interests in the bulk trades.
- (ii) This fact, when coupled with current market conditions, caused considerable emphasis to be placed on the sale and purchase of vessels at the right time.
- (iii) Most companies in this category wished to stay in the business.
- (iv) The sale and purchase markets were used to maintain, replace, and expand the interests in shipping.
- (v) The need to use the sale and purchase markets at opportune moments emphasised the advantage of having ships which would retain a good second hand value.

(vi) Attitudes towards liquidity and debt were somewhat conservative.

A variety of miscellaneous strategies were also found.

3.2 Areas of Business/Approach to diversification

Not surprisingly, most companies in this category were involved in a relatively restricted range of activities, with only four companies having significant activities outside of shipping. Even in these four cases, the shipping activities had either provided the base for the other activities, or were by far the largest of the activities. In three of these four cases there appears to have been a positive decision to diversify, although in two of them the policy was very clearly one of limited diversification. Only one of these four companies was involved in more than two completely unrelated areas of business. This particular company had four areas of business, all of which were quite different. Interestingly, in discussing this, it was pointed out that such an approach was:

"... not typical for Greek owners, the majority of whom are still in shipping, although more are now moving into such things as real estate, precious metals, etc."

In each of the other three cases only one further area of activity (other than shipping) was identified. Interestingly, interests in Real Estate were found in two of the four companies. The reason appears to be the similarities between ships and property in terms of their revenue earning and transferability characteristics. Overall, there is no doubt that for category 3 companies, diversification out of shipping was unlikely to be significant.

Even within shipping the degree of diversification was limited. Of the 13 companies still operating ships:

- (i) Seven were exclusively engaged in bulk shipping.
- (ii) Four (referred to in the last paragraph) had some diversification out of shipping. Within shipping three were involved exclusively in the bulk trades, while the fourth had interests in a regular trade to a certain part of the world, for which subsidies/rebates were available (the ships were nonetheless essentially bulk carriers).
- (iii) Two were involved in both bulk shipping and other areas of shipping. One had further interests in supply boats and ship management. The other had liners and cruise ships besides substantial interests in the bulk trades.

Of these 13 companies, 12 had interests in dry bulk, with six having interest in tankers. One of the companies which was not in tankers made the point that this was a conscious decision, since the company felt that the days of the independent tanker owner were coming to a close. One of the companies which was involved with the tanker trades made the point that *"most Greeks are afraid of the tanker market. We are not."* This statement is not completely supported by the evidence collected in this study. Of the seven Greek companies interviewed six were involved in dry bulk, and four in the tanker trades. However, what did become clear was that the tanker trades require a different expertise in some respects to dry bulk shipping, and that tankers are more expensive to acquire. These facts, when coupled with the current excess supply with regard to tanker tonnage, undoubtedly make tanker activities appear to be a more risky venture than dry bulk shipping. The latter was perceived (at the time of the interviews) to have fewer problems (although overtonnaging is an increasing problem) and to be the easiest area of shipping to enter or leave.

In the course of the discussions on activities/trades the point was made directly in two companies, and implicitly in several others, that various trades were effectively closed to them, or that they simply could not compete with companies such as those of category 1. In particular, several had tried to get into the liner trades in the early days but found this to be impossible, because of the strength of existing conference or consortia arrangements. The liner trades thus tended to be regarded as a "closed shop" by companies in this category. Cruising was another activity perceived as likely to be reduced or stopped, because of the fact that this business was now "extremely competitive", as well as being very expensive to enter.

The end result of all this was an effective limitation of the shipping activities of category 3 companies to:

- (i) the bulk trades
- (ii) smaller specialist areas of activity

with the former generally representing the most important part of the companies activities. Very little scope for other shipping activities exists, and this needs to be remembered in subsequent discussions, which are largely influenced by the particular characteristics of the bulk shipping markets.

3.3 Philosophy with regard to earnings

A striking feature of companies in this category, which reflects their dependence on the bulk shipping market, was their attitude towards trade in ships, as compared with trade by using ships. Ten of the 13 companies currently operating ships emphasised strongly that trade in ships was an essential part of their strategy. Indeed five of these argued that profits on the disposal of vessels were more lucrative than profits from using the same vessels, e.g.

"We believe even more in making money out of sales (of ships) because profits materialise faster and more positively than from trade."

"Buying and selling ships is probably more important than trading, though there is a great deal of sentimentality."

The reasons for this approach were based upon two premises. First, the market for bulk shipping was large and competitive, so individual companies could do little to influence the market and associated returns. Second, this market is volatile, with a consequent effect on both freight rates and disposal value of ships. In fact most owners saw a strong element of cyclicity to the markets, although the "down" cycle was now perceived as being much longer than the "up" cycle. When the market was "down" or low, returns from using ships were likely to be low. Hence, if much money was to be made it would need to be made by buying and selling at the right time. Even if a vessel was built to operate, buying it at the right time, i.e. when the price was low, would help keep capital costs down, an important factor in a competitive market.

Certainly, it is not difficult to find evidence of substantial sums of money being made by companies adopting this view towards ships. For example, Graig Shipping plc sold a vessel, the Garth Newydd, in the financial year 1981/82, for in excess of £9M, (giving a pre-tax profit in excess of £5M). The proceeds were held on to for some time, and in the Annual Report for 1981/82 the Chairman made the following comments, after referring to the sale of the Garth Newydd.

"On the shipping side we continue to trade our M/V Graigwen, but due to the present appalling state of the freight market we are unable to make a profit with the vessel. At the moment ships are laid up all over the world and those that are trading in some cases are taking staggering losses in order to do so. Bearing in mind the large volume of tonnage presently on order and due to be delivered within the next six months, it is our view that conditions in world shipping will continue to deteriorate at least until the end of the year."

"However, we have every intention of remaining in shipping and with this end in view, we are keeping a very active interest in both the new building and the second hand market in order that we can replace our tonnage when a suitable opportunity arises." (Graig Shipping plc - Annual Report 1981/82 P6.)

Some time later, in early 1983, Graig acquired the Ben Wyvis, a ship of similar age to that disposed of, but of almost twice the tonnage, for approximately \$4M. By holding on to the proceeds from the sale of the Garth Newydd in US dollars the company was also able to report a £1.43M exchange rate gain in the period to 31st March 1982.

Before leaving this section, it should be remembered that three companies did not emphasise the buying and selling of vessels as significant. Two of these operated in the short sea and coastal trades, with significant parts of their work being covered by contracts. Both acquired ships when they were needed, and intended to keep them for some time. Little thought was given to the sale and purchase market in the interim. The third company was involved in the Jones Act tanker trades, and the ships had been built to use, not to sell. When built they had charters, and a lot of trade existed. They were subsequently upgraded, but since then the market had gone down dramatically.

When acquiring ships the existence of charters was undoubtedly preferred. Five companies stated that they would not normally acquire vessels without charters, though the problems of obtaining reasonable charters was resulting in changes in attitude. For example, one company looked for charters of three years or more. One aimed to get 70% of its vessels on 2-5 year cover, with the rest being on the spot market. Even these limited ambitions were not proving achievable at the time of the interview, and all the vessels owned by the second of these companies were operating on the spot market. It would thus appear that relatively conservative attitudes were being outweighed by other factors, not least the desire to stay in the business, a point which will be discussed in the next section.

3.4 Types of acquisition and Approaches to acquisition

A number of companies in the survey provided further examples of another strategy, closely related to the buying and selling of ships. In the section on objectives, attention was given to various objectives to do with continuing in business, or to replacement and/or expansion of assets. Careful use of the sale and purchase markets was identified as an important part of achieving replacement or expansion objectives in seven of the 13 shipowning companies. One of these made the point that expansion could in fact be achieved in three ways:

- (i) growth in the number of ships owned or used
- (ii) growth through the use of larger ships

(iii) growth through improved quality of tonnage.

The view was expressed that *"All Greeks look for one of these, probably in this order"*.

The third point was often related to the age of the ships, and the sale and purchase markets were used to overcome what was referred to by one company as the *"age problem"* of its ships. This particular company consciously sought to get the age of its ships down. They always watched the markets very carefully, selling when the market was high, buying when it was at the bottom. They felt that they could often get three times the number of ships they originally had by the end of a particular cycle, or equivalent improvements in the quality or age of their ships. This policy had enabled them to bring down the average age of their ships from the upper teens to about ten. Variations on this theme could be found in all seven companies referred to above.

As with the category 2 bulk carrier companies, emphasis was given to acquiring flexible, handy sized vessels. Such vessels, besides keeping more revenue earning options open, also generally had good second hand values. An alternative approach was what might be termed the *"balanced fleet"* concept. This approach was based upon the idea of keeping a balance within the fleet, of vessels of different sizes and capabilities, on the grounds that the markets for different ships are not uniform, so some measure of risk reduction is achieved. Five of the 13 companies currently operating vessels gave one or other of these approaches considerable emphasis.

3.5 Flexibility/opportunism

It is probably the importance placed on the sale and purchase markets which leads many observers in the industry, not least among category 1 companies, to describe the behaviour of category 3 companies as opportunistic or entrepreneurial. Certainly such behaviour does require a rapid response when a bargain or opportunity is seen. Whether the implication that such behaviour is risky is justified is another matter altogether, as will be seen from the following discussion.

Certainly there is little doubt that companies in this category did not perceive themselves as being particularly risk taking. Given the nature of the business, with long periods of recession being followed by short periods of boom, during which profits could be made, category 3 companies often developed an approach of keeping losses to a minimum in periods of recession (and preferably avoiding them altogether), while ensuring that the company is in a position to make substantial profits when the

upturn comes. By buying when the market was low, particularly if debt raised on the ships was low, capital and financing costs could be kept to a minimum, thus making it more likely that the ship could trade at close to break-even, or better, even in the recession. Careful choice of vessel in terms of its disposability would then allow profits to be made when the market turned up. This emphasis on disposability tends to result in companies not acquiring ships which are purpose built for a particular trade, but general purpose ships, with good fuel economy. Two companies also made reference to the importance attached to where the vessels had actually been built, since this significantly affected the perceived quality and hence second hand price.

Linked to this strategy (indeed, underpinning it) was an overall concern with cash flow. It would probably be more correct to say that the concern with avoiding losses in periods of recession, referred to above, was in fact a concern with avoiding cash flow deficits in periods of recession. This point will be returned to in the section on capital structure.

One company likened this approach to that of acquiring an house. The vessel acquisition was perceived as a long term venture, with the major concern being the ability to "survive" the cash outflows associated with buying and running the vessel over 5-10 years. At the end of that time the vessel was then owned, so the company was constantly building up its capital base. Return on equity as such was not perceived as important. Such an approach, especially if coupled with conservative borrowing, also puts companies in an extremely strong position in terms of survival.

3.6 Miscellaneous points on Philosophy and Strategy

Another feature found in a small number of the companies related to the total size of the commitment to the industry, usually expressed in terms of the number of ships. Three of the companies identified their optimal fleet size as being between 6 and 10 ships, and in several other cases similar impressions were obtained. The logic of this seemed to be based upon two facts. Firstly, becoming too large might result in a loss of control of the organisation. Secondly, the management structure of the companies, together with the associated support services, was set up for, and could cope with, this sort of number of ships. Any increase was likely to lead to significant changes in the management style and structure of the company. Given the personal or family nature of the management of certain companies, this later step was viewed with misgivings.

Inevitably a number of strategies and approaches were found which were rather more individualistic than those described above. One company typically acquired ships by the use of long term charters with an option to buy them. A small number of companies chartered in vessels to satisfy short term excess demand, whereas the more typical approach was to look for employment for the vessels owned. One company had developed an effective policy of making money by using and scrapping old vessels, with the view that *"scrapping generates dollars"*. This company therefore adopted a very short term view of decisions, with a consequently different perspective on risk analysis. Basically this company bought ships at (or close to) scrap value, and then got a few more years work out of them. It was not expected that vessels of this type would be kept for more than 4-5 years, so the emphasis was on payback. A cargo to a part of the world where the vessel could be scrapped at a good price was likely to be the final trigger to scrapping.

4. Corporate Planning

4.1 Introduction and summary of findings

This section is concerned with identifying the extent to which formal corporate planning systems exist in category 3 companies, and their impact on investment and financing decisions. Very few companies had such systems, and their impact on investment decisions was slight.

4.2 Corporate Planning Systems

Of the 15 companies interviewed only two had anything approaching a formal corporate plan. In one of these plans were done periodically for 3-5 years, principally with the aim of relating the company's shipping activities to the business cycle. In the second company the planning was largely concerned with target setting for both geographical areas and commodities, and ensuring appropriate tonnage was available.

In two other companies no formalised corporate plan existed, but informal processes took place which were similar in some respects to those found in more formal systems. In one of these annual

budgets were prepared, together with cash flow projections 2 1/2 years forward (beyond that was considered to be a waste of time). In addition the directors met regularly, if informally, and were very aware of where the company was, and of the overall state of the market. Significant market studies were carried out for the non bulk shipping areas of the company, covering shipping needs for the sector, market shares, and type of vessel. This particular area of activity was considered to be capable of assessment five years on. Similar activities did not occur with the bulk shipping activities, but the proportion of time spent on strategic thinking in this area was nonetheless high. The emphasis of the other company referred to above was on planning the structure of debt, identifying cycles, and supply/demand relationships.

In the remaining companies little was done in the way of formal planning or detailed consideration of economic data, other than overall supply/demand relationships for bulk shipping. This was generally using figures and other data collected from the specialist press and brokers, and will be dealt with in more detail in the next section. In addition to the four companies referred to in the first two paragraphs of this section, a further four clearly kept a fairly close eye on the supply/demand relationships. However, such an approach is quite dissimilar to the formal planning systems found in category 1 and some category 2 companies. Indeed, in some senses it is not really planning at all, but a necessary pre-requisite to the "opportunistic" approach to the sale and purchase market identified in the earlier section on philosophies and strategies. This approach did, of course, require an ability to survive in cash flow terms for quite long periods, and concerns with cash flow were either explicit or implicit in almost all companies in this category.

Consideration of the summary of responses of one company will provide an example of the approach described in the previous paragraph. This particular company had no action plans as such, and no targets were set. Instead, it was standing back and waiting for the market to pick up. However, it did keep a general eye on the state of the world economy, and a more detailed eye on the supply/demand side of bulk shipping, in an attempt to identify opportunities in terms of both type and timing. A two year budget was prepared (somewhat unusually), but this was strictly "loss" and "cash flow" oriented, rather than operational.

One company commissioned detailed outside studies as needed, covering such things as the charter markets, the Alaskan oil fields, etc.

4.3 Reasons given for the absence of Planning Systems

Few clear reasons were given for the relative lack of planning systems. Given the nature of the activities of most companies in this category, namely bulk shipping, it is not unreasonable to assume that difficulty of forecasting, as identified in certain category 2 companies, was a significant factor. The size of the companies, particularly given the importance of families and/or individuals, was also of undoubted significance. A further factor, which may be related to this last point, relates to what might be described as "the way of doing business". Four companies (three of which were Greek), specifically made comments along the lines that corporate planning, and the associated study of such things as macro-economic indicators, was not the way it was done. e.g.

"The private shipowner doesn't go about his business that way."

"Generally Greek owners don't think this way."

The philosophies and strategies identified earlier are clearly related to this view.

5. Project Appraisal

5.1 Introduction and summary of Findings

This section attempts to assess the importance of traditional methods of investment appraisal, and to identify appraisal methods actually in use in category 3 companies. Little detailed work appeared to have taken place with regard to macro-economic indicators and other figures related to world trade. The emphasis tended to be on a more detailed study of the market with a view to identifying opportune moments for buying and selling ships, and with identifying potential shortages in the market. Relatively little attempt was thus made to forecast revenues for any length of time ahead. Operating costs were generally known in a fair amount of detail, but again a substantial proportion of companies did not attempt to forecast very far in advance. Initial responses to questions on the use of the traditional appraisal methods suggested more use of these methods than might have been expected, although only 50% of the companies said they used discounting methods. Further discussions however, revealed inconsistencies in statements made, and also led many companies to play down the importance of the

traditional appraisal methods in reaching a final decision. Such calculations as were made tended to concentrate on the identification of break-even freight rates, and the clear identification of cash flow obligations for some time ahead. These obligations typically covered both operating and financing costs.

5.2 Appraisal Methods used

Useful and usable responses were obtained from 12 of the 13 companies currently operating ships. It is apparent from the Corporate Planning Section that very little was done by companies in this category in the way of forecasts of macro-economic and trade related figures as such. Eight of the companies kept a close eye on supply and demand relationships as a matter of course, with a ninth commissioning studies as needed. There is little doubt that the others had a broad overview of general market conditions, or consulted agents and brokers whenever an important investment/disinvestment decision was to be made. Agents and brokers typically have a variety of market information at hand which can be used to update shipowners as needed. Interestingly, one of the companies interviewed, which was principally an agency company, commented in detail on the kind of information it was asked for, or could provide if asked for, for shipowners or other interested parties. This included such things as the volume of commerce; the direction of trade movement; costs of transporting goods to ports, as well as costs for the sea-leg; prices and competitiveness; political factors; market shares; competitor costs; and the effect of other trades on the proposed activity.

In spite of the availability of a considerable amount of information, there is little doubt that detailed market forecasts were extremely rare in this category. Even forecasts of costs and revenues were far from universal. While all companies which responded to questions on this area clearly knew their costs in some detail, only seven attempted to project them forwards. Only four companies attempted to forecast revenues. A summary of the results on operating flow forecasts is shown in Table 21.

Period Ahead in years	None	1-2	3-5	5-10	10+	Unspecified
Operating costs	5	-	2	1	2	2
Operating revenues	7	-	1	2	-	1

Table 21 Forecasts of costs/revenues - category 3 companies

Inflation adjustments were incorporated in four cases. It should be noted that where charters exist, revenue forecasts become much easier. Attempts to forecast disposal values were only made in three cases, and in one of these ships were only purchased at figures close to scrap value. Given the earlier comments, in the philosophies and strategies section, on opportunistic sales, this result is a little surprising. It reinforces the points made then, however, about the importance of having vessels capable of being resold when a good market opportunity arises. The emphasis is placed on being in a good position to take an opportunity, rather than attempting to quantify the result of taking an hypothetical opportunity.

Questions concerning the use of the four standard appraisal methods were asked, with the following initial results.

Number of Methods	Payback	ARR	NPV	IRR	Total
No methods					3
One method	2			1	3
Two methods	1	1	1	1	2
Three methods	1	1		1	1
Four methods	3	3	3	3	3
	7	5	4	6	12

Table 22 Appraisal methods used - category 3 companies

These results suggest that a reasonable use is made of the traditional methods, and could be taken to imply that they are an important part of the decision making process. Such an implication would be misleading, since subsequent discussions and questions made it apparent that in reality these techniques were of relatively minor importance.

A moments reflection will make it clear that these traditional appraisal methods require certain figures to be assumed with regard to operating costs and revenues. Table 21 indicated that only five companies specified that they forecast operating costs for periods in excess of three years, with only three forecasting revenues. Only three companies (possibly plus one which failed to specify its position with regard to revenue forecasts) could therefore effectively appraise projects using these techniques based upon forecasts. Clearly they could be used by assuming other figures, such as current revenues,

but only one such example was cited, in which discounting techniques were used under specified assumptions. Inconsistencies in statements made about the use of appraisal methods were found in a number of cases, casting serious doubts on the figure shown in Table 22. These inconsistencies were particularly apparent in the area of discounting techniques. The reason for this is not clear. It may be due to the fact that discounting techniques may well be used only occasionally rather than routinely. It may be that the systems were not properly understood. Certainly an element of defensiveness was detected in some cases, as if companies felt that they ought to be using these methods. It may simply be that these methods are not considered useful. Whatever the reasons, a number of companies which had described their strategies in detail, became very vague when discussing discounting and the other appraisal methods. These doubts referred to above were heightened by responses to questions concerning the choice of a discount or hurdle rate, where discounting techniques were said to be used. Two of the companies which said that they used both NPV and IRR calculations appeared not to have any clear ideas on appropriate rates, and certainly failed to identify either a rate or a rationale for it. One company said that the rate varied, but 16% was "typical". No rationale for this figure was given. One company which said that it did both NPV and IRR calculations used market rates, by implication for loan finance, even though cash flows included debt raised and repaid. One company calculated IRR only, and had no specified rate required. The final company used 25% and made it clear that this was considered to be an appropriate return on equity. Given that the cash flows included debt raised and repaid such an approach seems eminently reasonable. The implication of this analysis is that only a maximum of three companies were using discounting techniques in anything approaching a systematic way, which in turn reinforces the impression given earlier that Table 22 significantly exaggerates the effective use of discounting techniques, especially the use of NPV, given that only one of the three companies using discounting systematically, was using NPV.

Similar doubts exist with regard to the effective use of payback and ARR, given the lack of detailed forecasts. In reality it seems more likely that payback would be linked to the concerns with liquidity identified earlier, while ARR is more likely to be related to the company as a whole.

Clearly this area is one of the least satisfactory in terms of precision of answers. Overall these traditional appraisal methods appeared to be far less important than might have been expected from Table 22. However, in order to ascertain more precisely their use, it is necessary to look carefully at the systems actually used. In the following paragraphs the systems of the six companies which said

that they use discounting techniques will be considered, to provide insights into both the general approach and the use of the traditional appraisal methods.

Three companies either stated or clearly implied that all four methods would be used. The first of these stated that their ranking or use would *"depend on circumstances"*. However, they then went on to describe their approach to investment. Their *"drill"* was basically as follows.

- (i) investigate chartering needs
- (ii) look at supply/demand/orders/scraping - find the type of vessel needed most
- (iii) consider the proposed vessel type by comparisons with existing ships, in such things as increased cargo capacity, speed, fuel consumption, flag and insurance costs
- (iv) calculate daily cost (with an adjustment for inflation) and calculate the obligations and expected income.

The principal concern was with ensuring that obligations were clearly known, and that the company could cope with them. The implication was made that the four appraisal methods would then be used, though the precise weighting given to these methods was unclear. Given the explicit emphasis on "obligations" it is unlikely that the traditional appraisal methods were of paramount importance.

The second company which said that it used all four methods described its approach as follows:

"We say, OK, we're going to buy this ship for \$3M, and we're going to amortise it at \$3000 a day, and that gives us a five year payout. And it costs \$3000 a day for crew, etc., so this ship has to earn \$6000 a day in order to live up to its projection. So we've got to take a cargo of ... tonnes, which translates into a net charter rate of \$6000 a day. But if you're running ten ships, and one's a \$1000 a day behind, and one's a \$1000 ahead, that's OK."

Judgements would then be made about the chances of these rates being achieved. A break-even rate would be calculated. ARR and discounting techniques would also be used but these were *"not too sophisticated"*. Subsequent comments made it clear that they were not an integral part of the decision making process, but a means of helping raise finance: i.e.

"I think they're very cosmetic. My opinion is once you've obtained the loan and the financing you can throw them away."

The third company supposedly using all four appraisal methods, having described an appraisal system in which forecasts of operating costs and revenues as such were made, then went on to say that *"someone"* would work out the figures by the traditional methods, but *"these were not of prime importance"*.

Besides the three companies just referred to, three other companies said that they used

discounting techniques. In one case the company used a computer package to help evaluate projects, and both NPV and IRR were said to be calculated in the package. However, the company did not look at any of the standard methods very carefully. They were concerned with absolute figures, particularly cash flows over five, eight and ten years. In the second case the company certainly projected operating flows out for in excess of five years, and calculated an IRR, as well as using payback and ARR. The discounting techniques were clearly not a significant part of the process, as is evidenced by the fact that the observation was made that *"we do dcf, but we don't find it useful."* In the third case an internal rate of return was calculated based upon estimates of time charter rates for the next three years, followed by a 12 year plateau and a disposal value. IRR was used to avoid the problem of choice of discount rate. The calculations were made on the basis of both operating and financing flows, so the IRR represented a return on equity. The return normally required was 25%. There was little doubt that these calculations were a significant element in the decision process in this company, together with concerns with the cash flow and fleet balance.

These descriptions of the approaches actually used reinforce the earlier comments about the relative unimportance of the traditional techniques in project appraisal in most companies in category 3. A description of the methods used in the remaining companies in the category would tend to re-inforce this further, since few of these included any of the standard appraisal methods in their system. One used Payback and ARR, two used payback, and the remaining three used none of the methods. This still leaves unanswered the question of what companies actually did to appraise projects. In a sense the strategies adopted almost resulted in decisions being made without the use of formal appraisal techniques, since the emphasis was an action when the market was right. However, specific calculations were usually made to ensure that cash flow problems would not arise, or would be kept to manageable levels. The calculation of break-even freight rates is one aspect of this. Cash flow analysis of some sort is another.

Seven of the 12 companies providing usable responses to this area calculated break-even freight rates, or something closely related to them. In six companies the calculations were straight forward break-even calculations, usually covering debt service commitments as well as operating costs. In the seventh company costs were estimated and compared with current revenues, and those expected for a "good" market and a "bad" market. Cost escalation was also incorporated into these comparisons. While not precisely the same as the calculation of a break-even rate the aim of this procedure was

broadly similar.

Nine of the 12 stressed the importance of cash flow analysis in some form or another. In three cases the emphasis was on individual vessels. In six cases it was on the corporate entity. In almost all cases the objective was to identify the cash flow obligations associated with both operating and funding vessels, so as to enable a judgement to be made on the likelihood of these obligations being covered under different market conditions. The conversion of these obligations into break-even rates was part of this process. One company indicated that individual cash flow calculations would only be made for certain ships, namely expensive ships or those with high debt.

Three companies did not explicitly identify cash flows as a major part of their appraisal. In one of these cases no new investment was envisaged in the foreseeable future. Previous investment decisions had been made either with charters, in which case cash flow risk was minimal, or at a time when the market appeared good, and substantial cash reserves existed. Cash flow reports were identified as an important part of the monitoring and control process, and it is likely that cash flow analysis would form an important part of any future investment appraisal. At present however, such a situation was viewed as purely hypothetical. In the other two cases the market analysis was thorough, and both companies also had substantial cash reserves. Liquidity considerations were not ignored, they were simply less pressing, so the need for detailed cash flow analysis was reduced.

By way of illustration, a broad description of the approach used in one of these companies is given below. This company examined the supply side of the industry carefully, and were thus able to identify the sort of ship needed most. Costs were known *"in detail"*. Current revenues were known, and break-even rates were calculated. Residual values were looked at to see what they would need to be to cover trading losses. A view could then be taken on the likelihood of such values being achievable. Scrap value could be a consideration for older ships. Inflation adjustments were incorporated in detail, as was *"some sort of margin to be safe."* Concerns appeared to be with downside risk, which was the main reason for the cash flow analysis done in the other companies.

The above represent the main components of appraisal methods for category 3 companies. Several companies referred to other features set out below, but no consistency existed with any other methods.

- (i) One company looked at absolute figures for profit and cash, rather than return on investment.
- (ii) One company stated that it would not normally take on a new vessel unless it contributed to

profits immediately.

(iii) One company stated that it would take a loss in the first year to make profits later.

(iv) One company attempted to identify the time at which the vessel would be *"self supporting"*, i.e. debt service would be covered in almost any market.

6. Risk in Investment Decisions

6.1 Introduction and summary of findings

This section is concerned with identifying ways in which companies in this category deal with risk in the investment decision. As with category 2 companies, very little new information was obtained as a result of further questions being specifically asked about risk. Real concern exists with "downside risk", but this was dealt with in the general way covered in the sections on philosophies and strategies, and project appraisal. Analytical techniques were used in only five companies, and then infrequently. Nine companies made reference to currency risk, but not all of these avoided it. Twelve usable responses were received for this section.

6.2 General Approaches to Risk

The approach to risk of most category 3 companies can be found in sections 3 and 5, covering philosophies and strategies and appraisal methods used. In summary these comprise:

- (i) a policy of buying at the bottom of the market and selling at the top. Ships acquired at the bottom of the market will have lower capital costs than other ships;
- (ii) the acquisition of general purpose ships likely to hold their values well (especially when coupled with (i));
- (iii) careful appraisal of the commitments of the company in terms of cash flow, both operating and financing. In some cases this is reinforced by conservative attitudes to debt, a point dealt with more fully in section 7.

The only other area of general concern was that of currency risk. Three companies were confined to domestic trades, with both income and expenditure in sterling or dollars. These companies

were clearly not concerned with currency risk. However, all of the other nine companies expressed some concern with currency fluctuations, but this did not result in the avoidance of currency risk in all cases possible. Certain currencies were carefully avoided, whereas risks were taken with others. In some cases the size of the risk was a factor. All nine companies had either hedged, taken out multi-currency loans, (or restricted themselves to dollar or sterling loans), or covered ahead in certain circumstances. Four companies had taken currency risk.

6.3 Analytical approaches to Risk

Questions on the use of sensitivity analysis and other techniques for dealing with risk elicited only five positive responses. Of these only one used sensitivity analysis *"a lot"*, mainly to deal with different assumptions about financing costs, the loan period, and revenues, (though not costs as these were considered to be known fairly accurately). A second company always took *"an extreme case market"*, and allowed for a period of at least 1-2 years of zero trading profit. If the deficit could not be covered from other sources, then the project would be rejected as being *"not a good risk"*. In the other three cases sensitivities were *"played around with"*, although nothing in particular was mentioned. In short, this area of risk analysis was underutilised, even although the strategies are perfectly consistent with an extensive use of sensitivity analysis.

7. Financing Aspects of Investment Decisions

7.1 Introduction and Summary of Findings

Twelve usable responses were obtained from category 3 companies for this section. In general it was found that the financing decision was a fairly important part of the overall decision, particularly for new vessels, and had some influence on where vessels were built. The importance of financing was less for second hand vessels. Finance for new vessels was mainly yard credit or bank finance, with some coming from retentions. Second hand finance was typically from retentions and bank loans. Loan periods and maximum amounts available followed standard conditions fairly closely, as did security requirements, though some slight differences in emphasis were found. Maximum borrowings usually

occurred for new vessels, sometimes solely because of the subsidy. The proportion borrowed was much smaller for second hand vessels.

Questions on capital structure made it clear that capital structure as such was of little significance. The critical questions concerned ability to service debt, often through periods of recession. Approximately two thirds of the companies took conservative attitudes towards debt. The remainder took on larger amounts of debt, but spent a considerable time on cash flow analysis. Nevertheless the exposure to risk of these latter companies was considerably greater than that of those with low debt.

7.2 Relationship between the Investment and Financing Decisions

Of the twelve usable answers which were obtained to a question about this relationship between the investment and financing decisions, seven indicated that the two were closely linked. A further two companies saw no problems in raising finance, so were able to concentrate on the investment decision. Another said that the investment decision was probably made before the financing, but the financing would always be in the back of their mind. One felt the two aspects were *"separable but both important"*. The final company kept the two separate, but felt that it did not give financing as much consideration as it should.

Ten responses were received with regard to the question about the influence of financial arrangements on the choice of shipbuilder. Several companies were excluded simply because they did not buy new vessels.

In five cases financial considerations did not appear to have been a significant explicit consideration in the decision. However, in at least four of these the availability of yard credit or government backing (SMFC or Title XI) had been established. By implication the use of such credit established which country the vessels would be built in, even if some choice with regard to the individual shipyard remained. In the fifth case the company used builders that it knew.

In the other five cases the financial arrangements were an explicit consideration in reaching a decision, though in two cases price was established as the first consideration. Overall the final decision seemed to be a balance between cost, quality, delivery time, currency and financial arrangements.

7.3 Methods of Finance

All 12 companies responding to questions on methods of finance used either yard credit or bank loans, or both, to cover part of the cost. Ten companies used yard credit, and nine bank loans. Only two had actually used lease finance, though a further four companies had considered it. These companies had rejected leasing either for tax reasons, or because it took away their flexibility to dispose of assets at appropriate but unforeseeable times. Similar reasons for not even considering leasing, were given in almost all the other cases, although one company pointed out that lease finance was not generally available for second hand ships anyway. One company, while not prepared to consider leasing, was prepared to consider a charter with an option to buy. No significant inputs of new equity were found in these companies, though clearly retentions played an important part in funding investments. The main reason for this was essentially that of control. The period of loans, and the proportion borrowed, were influenced, if not determined, by the age of the vessels being purchased. For new vessels standard yard credit was available, usually 60-90% of cost, spread over 7-12 years. For second hand vessels 50-60% was a more normal proportion available, usually for periods of 3-6 years. These proportions were not necessarily taken up by companies. Specific questions were asked about both the periods for which loans were taken out, and whether companies would normally take up the maximum amount available. Six of the 12 respondents made it clear that they would not necessarily, or even normally, take out the maximum loans obtainable, with comments such as:

"We would take the maximum we required, not necessarily the maximum we could."

"We borrow what we can readily repay.."

Two of these six companies made the point that they would probably take up maximum (or close to maximum) loans on new ships, simply because of the subsidy. This was definitely not the case with second hand vessels. The other six companies said that they would take up the maximum amount of loan. In two of these cases this appeared to be largely because of the subsidy, and also second hand vessels did not represent other than a minor part of their acquisitions. One company borrowed high proportions on individual vessels, but had very low debt overall, implying borrowing for convenience rather than need. Only three of the 12 respondents appeared to take high debt on individual vessels and to show little concern with overall levels of gearing.

Apart from one case, where 20 year loans were obtained using Title XI finance, loan periods

actually obtained for new vessels varied from 5-12 years, with eight years being typical. Yard credit facilities were effectively the same for category 3 companies as for those of the other categories. Proportions actually borrowed on new ships tended to reflect this. For second hand ships loan periods ranged from six months to eight years, with 3-5 years being typical. In only one case was more than 70% of the cost of a second hand ship taken up as a loan, and this was for a ship acquired at close to scrap value, with the intention of it being used only for a short period, so the loan was capable of being viewed as of a short term, self-liquidating type. Substantial additional security was given. Other than this, actual proportions borrowed ranged from zero through to 70%. Small or cheap ships were often purchased for cash. Other examples could be found of substantial sums, running into several millions of dollars, being paid in cash. More typically sums borrowed on second hand tonnage were in the 30-60% range, with 50% a frequently quoted figure. Precise answers were not usually obtained to these questions, because so much was seen to depend upon circumstances, but a considerable degree of consistency was found in the ranges being discussed.

7.4 Security

Few differences were found between security requirements of category 3 and category 2 companies. Requirements were fairly standard, as set out in the chapter on banks. Slight differences in emphasis were given by companies in this category, as compared with those of category 2, particularly in the areas of second mortgages, and parent company (or personal) guarantees. More emphasis appears to be given to second mortgages. Guarantees were disliked and resisted where possible.

7.5 Capital Structure

As with the other categories, two separate questions were asked in an attempt to establish views on the extent to which debt finance could be used overall, rather than simply in relation to individual projects. Companies were thus asked:

- (i) Is there a limit to the total amount of debt taken up?
- (ii) Do you work towards the achievement of a particular long run capital structure which is broadly adhered to over time?

If specific limits or targets did exist, companies were asked to state what they were, and to give a

rationale for their choice. Answers were obtained from 12 companies.

Only one of the 12 companies responded that there was no limit to the total debt. The debt level was *"as high as we can get"*. Two companies did not appear to be unduly constrained by concerns about overall debt limits. In one of them the overall level of debt was said to be *"not foremost in the company's thinking"*. The other company, with very high gearing (described as *"fiendish"*), pointed out that without high gearing the kind of expansion which it had gone through would simply not have been possible. Great care was nonetheless taken with clearly identifying the commitments associated with this high level of debt. In both of these cases concerns were with ensuring that cash flow commitments were planned, understood, and covered, rather than with levels of debt overall.

Of the remaining nine companies, seven had a fairly clear view of the maximum debt they would be prepared to have outstanding. In three cases specific maximum debt/equity figures were given. In two cases these came out at 33% (based upon the ratio long term debt/(long term debt + equity)). Comments made included:

"We are very conservative. Our policy is not to owe a lot, but to be our own man."

"We are very wary of being overgeared."

The third company referred to always ensured that total debt was *"..within 40-50% of the low market value of the ships."* In three other cases ratios were conservative, with comments being made such as:

"We're always conservative, and lower than most others."

"We need to restrict debt according to our capability to service it."

In only one of the seven companies specifying a limit on debt was the limit effectively externally imposed. This company would not borrow more than 100% of the cost of assets and this represented a theoretical limit. For practical purposes such a limitation is no limitation, and this company ought to be added to the "no limit" companies. In the two remaining companies, answers indicated clearly that the question of a debt limit was somewhat hypothetical, since debt levels were low.

"We don't go beyond our means. We have to be in a position to repay loans out of our own assets."

"Our debt is so low that we don't really have to worry."

Discussion on target capital structure revealed that nine companies very clearly had no targets for this area. A tenth company distinguished carefully between good and bad markets, as ship values

vary dramatically. Hence debt/equity ratios in good markets would be much more conservative than those in poor markets. Nonetheless no specific targets appeared to exist. Of the remaining two companies, one refused to disclose its views on targets (or whether it had any), and one, mentioned above, always kept debt within 40-50% of the current market value of its ships. Target capital structures would thus not appear to be of significance to category 3 companies.

However, as was pointed out in the section on philosophies and strategies, clear views were found to exist with regard to liquidity and the ability to service debt, and capital structure has an effect on this. Capital structure ratios are thus really only a surrogate for this, and a somewhat imperfect one at that. In the discussions on limits to total debt it became clear that eight companies had fairly conservative limits to the amount of overall debt taken up. In three of the others detailed corporate cash flow forecasts were made for several years ahead, while in the fourth it was evident that sufficient liquidity existed to see the company through a long period of adverse trading. This implies that the capital structure debate with regard to category 3 companies is something of a red herring. Concerns appear to be twofold, namely:

- (i) the ability to service debt through periods of adverse trading as well as good trading;
- (ii) the degree of security to cover debts outstanding that actually exists at any particular time.

Approximately two thirds of the companies in category 3 considered that they had conservative debt ratios, but these appear to be geared to debt service ability, rather than because of any idea of market optimum. Certainly no company attempted, in any way, to relate share values to capital structure. There is little doubt that further debt could be raised in these companies, for additional security, but to do so would increase the risks of being unable to service debt in a time of depression. Those companies which have higher debt appear to spend a considerable amount of time on cash flow planning, with the emphasis again being on debt service. In a sense it could be said that only three of the twelve companies were taking high risks associated with their debt levels, and there is no doubt that the companies recognised this.

The second point referred to above relates to the ratio of debt to current market value of vessels. Given the nature of covenants required, this particular ratio was more often thought of than the traditional debt/equity ratios, calculated on an historical cost basis. A conservative approach to such ratios ensures that no problems arise with banks or other lenders, with regard to defaults on covenants. Such a result would lead to additional security being required by lenders, with a consequent

adverse effect on the ability of companies to behave in a rapid and opportunistic manner whenever the market was in an appropriate state.

8. An Example

8.1 Introduction

It is apparent that the overall approach to investment decision making for category 3 companies is much more general than that of the other categories. The breaking down of the complete process into its various constituent parts is thus much more artificial for this category, and undoubtedly accounts for the lower level of detailed analysis. In an attempt to link the various elements together, to convey a better impression of the overall approach, this section summarises the more important comments and responses of one of the companies interviewed. This company is fairly typical, and representative of the approach found in the majority of companies in this category. The details given below include references to the family, to philosophy and strategies, to past experiences, appraisal methods, and financing. While some points are clearly peculiar to this particular company, they provide useful insights into the complex and often implicit decision making process.

8.2 Nature of Business and Objectives

"We have always been a tramp shipping company ... we've always owned dry cargo vessels ... so we've been always employed in the carriage of bulk commodities since our foundation."

"... we have consciously decided that we can't totally rely on the shipping markets to give us our income over the next five or ten years, so we have made a decision to diversify, but in a modest way. We're certainly not going to put huge amounts out of our assets into a diversification, because that can be just as disastrous as buying another ship, particularly if you don't know anything about the business."

"We don't go out for more capital ... because it would destroy the family control."

"I think one of the main reasons for shipping being in the hands of family people is that you do have to make instant and quick decisions, and sometimes you have to make such a really quick decision that a corporate structure would be unable to come to a decision quickly in order to capture a bargain which is on offer. That's why you get a lot of Greek families and Far Eastern families able to suddenly emerge with an

enormous number of ships, because they've been able to find the bargain and buy it before anyone else realises it, and before a corporate structure can make a decision."

"Our objective is to make a profit, and in order to make a profit you've got to read your markets correctly. We haven't absolutely got set objectives that we must stay within the bulk carrier market. If we felt that any other shipping market was going to give us a profit, and we could see a reasonable trade, or reasonable prospects, we would buy or build that type of ship, because we're shipowners, not bulk-carriers."

8.3 Philosophies and Strategies

"Now when we look at a decision to buy or sell ships, it isn't dictated by the financial structure ..., its always dictated by market forces. Shipping is a very simple industry as regards economics ... because if there are too many ships, then the market is low, and if there are too few ships then the freight market is high. And we've always worked on the basis that when the freight markets are very high, even though you can see reasonable rewards from trading your ships, that is the time to think of selling your older units and modernising. We've done this over the last 25 years, and you can call it if you like trading in ships, because that is exactly what it is. So although we're shipowners we do consider that we trade in ships ... you make far more money from trading the ship than you do by trading your ships in the market."

"The best way to finance ships is to buy and sell properly. Because its very unwise to have even 80% of your ships running on borrowed money. Its a strain on your cash flow, when the markets get down, which can be so intolerable that you actually go out of business ... One of the main decisions in our company is that we will always try to find the tops and the bottoms of the market. Now that's easy to say, but if you're in the market place you have a reasonable idea when these are coming about. Only the fools hit the top and only the fools hit the bottom, but somewhere around the top of the market we would always sell our older units, and when the market's running at the bottom we would buy back in, again ... The history of the company shows that that is how we've actually traded ... "

8.4 Planning and Market Analysis

"The first issue that you look at is how many ships are being built, or what the capacity and the new building programme is in the world, and there are a number of people today who have their own statistical departments. You can ring up any number of leading brokers, who you know, because they're always talking to you, trying to interest you in doing particular deals, buying ships, that sort of thing, and you can say, 'What's your latest record of how many ships of a particular type are on the stocks?' They might not be absolutely precise, but they can give you a reasonable enough figure. You can then pick out an area of the market that you might think is undertonnaged ... You really haven't got a plan in shipping. Opportunistic, that's what you have to be. You have to truly be an entrepreneur in shipping."

"Every day you get perhaps 20 or 30 telexes in, purely on the sale and purchase market. So you know the new ships that are coming on the market. You know the price at which ships are being sold ... so you know whether the market is moving up or down ... and you get this on an instant basis, so you don't have to go into reams and reams of research, because it's being provided every day from

organisations in London."

"Because we're totally involved with our business, we would normally say that, out of our experience, we would be able to say what type of ship we would want to build or buy, because we follow the trends in the market, and we follow the size of ship ..., improvement in ports ... We watch all these sorts of things, and when it comes to buying we normally have done our own little market research beforehand ... by following the trends that have taken place within the industry."

Very clearly a lot of technical and design specifications are looked at routinely, with attention being devoted to the relationship between technical merit and price.

"You can't plan five years ahead in shipping ... It's not a business where you can sit down and set your corporate plan working for a two, three, five or ten year period, because events change more or less on a daily basis, so you're altering your figures, re-structuring your strategy, certainly on a weekly or monthly basis."

"We're always very aware of keeping our costs down, which is the main thing in shipping, but as far as making profit forecasts, either publicly or within the company, we do not do that, because we feel that that is very dangerous in shipping."

"So if you're coming to the questions, 'Do we look at the profit forecast and then make our investment decisions?', the answer is, 'No, most categorically, no.' We make our investment decisions in relation to what we have in the kitty, and how we feel the market is going to progress, that is the sale and purchase market and the freight market, two separate markets."

8.5 Appraisal Method

In discussing a recent investment the following comments were made.

"... it was a ship of which there are very few trading in the world, so we felt that when the market revived, it would be a good money earner for the company. We could afford to pay cash for the ship ... It looked as though the market had reached the bottom and was turning slightly. It was a good replacement for a ship that had been sold ..."

"We worked out how much we felt we could run the ship for, and we also looked at trades where the ship would be employed. We worked out our own estimates as to what return we would make on those trades, and how much we would need in order to break even on the venture ... The market was such that it was felt to be a break even venture with the prospect of the market getting a little better ..."

Break even rates were calculated for any routes that the ship could operate on, with up to 50 being calculated.

"By buying the ship we were not going to be losing much on trading her, and the prospect of making good money on her in the next two years are quite reasonable. Also we looked at the fact that the ship was worth well over \$... for scrap ... and has a life of another six or seven years ... All our risk capital was minimal ..."

Additional comments made it clear that the ship was in good condition, and required little in the way of alterations to design or accommodation. When all these factors were put together it was decided

to make a bid.

8.6 Financing

"Now when it comes to making decisions about financing a ship, the first thing we would actually want to do is to see whether we could finance it out of our own resources."

In discussing new buildings, and the availability of yard or governmental credit, the following comment was made.

"We did take up terms like that in 19.., from the Japanese Government, and the one hiccup we've had in our company since the war occurred because we took that type of credit, and also we took it in the local currency, .. So we got hit on the ... revaluation of the yen, plus the fact that the freight market didn't expand as rapidly as we'd hoped. So we did have cash flow difficulties when the ships were due for delivery ... and that was solely attributable to the fact that we had taken up, not just the yen credit, but the whole 80% credit."

"We don't have a set view in the company that we wouldn't borrow up to the maximum, but I think that we have a view that we would not extend ourselves to the extent that when you look at your cash flow projections on a borrowing of 80% or more, you find that you have to have an enormously good freight market in order just to pay your way."

"We would prefer to fund from our own reserves, but we would take up to 50%. If we could borrow at much lower than we could lend out our own money, then we would do that, but we would always have the background of having our own money in case things went wrong, to pay off the loan."

"We would certainly be very wary of being overgeared, because that's where all the shipping companies that are in trouble have gone wrong. There's no way of making up overindebtedness if the market is against you. And here again we wouldn't like to see a ratio of - an absolute maximum of - 50%."

This ratio was calculated on the basis of debt/equity, giving a ratio of 33% using long term debt/(long term debt + equity).

"Shipping companies should always have a reasonable amount of cash. I would have thought that it depends on the number of ships you own, and on your debt ... You've always got to have something for a rainy day in shipping, and ... I would think you must have a substantial amount of cash available in the company to pay for those maritime contingencies that may occur. Most ... Greeks have always got ... substantial cash balances."

Leasing was discussed and rejected, since:

"... up until very recently some of the leasing deals were very restrictive. You couldn't buy and sell, within the terms of the lease, and that's exactly what our business is. We would want to buy and sell when the markets are right."

Chapter 11

Summary of Findings

1. Introduction and Aims of Chapter

This chapter aims to summarise the preceeding three chapters, so as to provide a basis for assessing the relevance of the theory of finance, and its associated criticisms, outlined in chapter 3, for decisions on investment and financing within firms; for identifying potential links with theories of corporate planning and strategy outlined in Chapter 5; and for developing a descriptive model of investment and financing decisions in shipping.

The summary given below will follow a similar approach to that used in the earlier chapters, and will thus focus on similarities and differences in the following areas:

- (i) Objectives
- (ii) Philosophies and Strategies
- (iii) Areas of Activity
- (iv) Corporate Planning
- (v) Project Appraisal
- (vi) The approach to risk in investment decisions
- (vii) Financing aspects of investment decisions

In considering this chapter it should be noted that it is concentrating on points of principle, rather than detailing exceptional cases. The latter can be identified within each of the three previous chapters.

2. Summary of Findings

2.1 Objectives

In the sections on objectives in the preceeding three chapters no clear cut picture emerged with regard to objectives. However, the more important aspects of these discussions are summarised in Table 23.

Objectives	Category 1	Category 2	Category 3
Share price maximisation	Few	None	None
Other shareholder concerns	Considerable	Few	Almost non-existent
Concern with share price (usually for purposes of takeover or defence from takeover)	Several	None	None
Concern with regularity of dividends	Virtually all	Only public	Few
Concern with quality of earnings	Virtually all	Would like to be	Few
Concern with profitability in general terms	All	All	All
Concern with wealth but not regularity of earnings	Virtually none	Changing more to this	Most
Personal/family objectives	Very few	Reasonable number	Most

Table 23 Objectives - by category

The main points of similarity between the three categories appear to be as follows:

- (i) Virtually no reference was made to any formally written down objectives, within any of the three categories. This could be attributable to one of three factors. Either no written down objectives existed (as was almost certainly the case in the vast majority of the companies), or executives were unaware of such objectives, or they simply did not regard the objectives set as operational. Whichever of these is the case, there seems little doubt that decisions were being taken without reference to, or apparent need for, a set of specific, clear cut objectives.
- (ii) Share price maximisation was not seen as an operational objective in any company.

(iii) Virtually all companies had some kind of profitability objective, frequently implicit, frequently couched in very general terms.

(iv) Companies in all categories highlighted the problems of forecasting in volatile markets such as shipping, and the difficulties of setting precise objectives or targets.

The main Points of Difference appeared to be:

(i) Share price and shareholder concerns (but not share price maximisation) were found in a considerable number of category 1 companies, and some of the category 2 public companies. The main reasons for this appear to be related to takeovers, in terms of both minimising threats and maximising opportunities, and in maintaining good shareholder and institutional relations, so as to facilitate further fund raising. Share price and shareholder concerns were almost non-existent in those companies which were not public.

(ii) The category 1 public companies were virtually all extremely concerned about the quality of their earnings, to such an extent that the maintenance of high quality earnings could perhaps be identified as the principal objective. Implicitly, the maintenance of high quality earnings was seen as ensuring an appropriate and acceptable share price, and continued good shareholder relations. Many of the category 2 companies, especially the long established or public companies, had taken a similar view on the desirability of high quality earnings in the past. Most still wanted business of this sort. Most were finding it difficult to achieve, with a resultant change in attitude. Some of the private companies in category 2, and most of those in category 3, were concerned with wealth accretion in general terms, but not with quality of earnings per se.

(iii) Category 1 companies generally translated their profitability objectives into return on capital figures, typically return on shareholders equity. An objective of this sort was considered to be both appropriate and operational. While some companies in the other two categories took the same approach, many did not. The principal reasons for this appear to be related to the ideas set out in the preceeding paragraph, on quality of earnings. For category 2 and 3 companies profitability objectives were often long term, with an acceptance that short run fluctuations in profits would occur.

(iv) Virtually all category 1 companies had adopted an approach to dividend policy which was stable. Whether this policy was seen as an objective or as a constraint was unclear, although discussions tended to imply the latter. This view is reinforced by the relatively low payout ratios found in many companies. In general only the public companies in category 2 had the same desire, though lower quality

earnings were leading to less regular dividends. Very few of the remaining category 2 or 3 companies had any clear cut views on dividend policy, and many appeared to pay no dividends at all.

(v) Many of the category 2, and most of the category 3, companies were influenced (or capable of being influenced) by personal or family objectives. The exact nature and influence of such objectives could not be established, but their potential influence was generally acknowledged to be significant. For example, many category 2 companies, and virtually all category 3 companies, expressed the desire to continue in their existing lines of business, often to continue a family tradition. Retention of family control was important in many private corporations. Personal or family tax considerations frequently determined the business approach. Even in category 1 a small number of instances were found of this kind of influence. In general, however, the scope for a substantial influence of this type appeared much less for category 1 companies, as the level of corporate bureaucracy and the size of the companies increased.

(vi) Most category 1 companies appeared to have some kind of objective related to growth (which tended to reinforce the concerns with share price and shareholder or financial market relationships). Some category 2 and 3 companies had objectives of this type. Some were currently more concerned with survival. Some saw growth from a particular viewpoint in terms of improvements in the number, size and quality of ships, up to a maximum point, beyond which it was not possible to go, while still preserving the existing nature of the business.

2.2 Philosophies and Strategies

Finance theory says little about the philosophies underlying most business decisions, or the strategies used to achieve a desired position. In the course of this study a number of philosophies and strategies were identified early on, and followed up by consistent questioning. These provide useful insights into the way in which different companies approach their investment and financing decisions. The more important of these are summarised in table 24.

This table highlights a number of interesting differences between the three categories. At first sight there appears to be little similarity between them. However, running through all three, and overlapping to some extent with objectives, was the idea of flexibility. Interestingly, approaches found were often similar in essence to the ideas set out by Donaldson in 1969, referred to on pages 69/70. This point will be returned to in the next chapter. Certainly very few companies in the study did not

emphasise flexibility at some stage. Flexibility was identified in four, frequently overlapping areas:

- (i) Strategic positioning
- (ii) Market flexibility
- (iii) Operating flexibility
- (iv) Financial flexibility

Philosophy /Strategy	Category 1	Category 2	Category 3
Speculation on purchase of assets or businesses	Virtually none	Little	Most
Opportunism	Some	Some	Most
Use of High Technology or Specialist (expensive) ships	Virtually all	Few	Virtually none
Use of general purpose or handy size ships	Virtually none	Most	Virtually All
Use of strategic positioning through diversification	Virtually all	Few	Virtually none
Degree of diversification	Typically 3 - 8 different areas of business (3 - 5 in USA - generally more closely connected)	Relatively limited outside of shipping	Virtually none outside of shipping
Market flexibility	Most	Some	Few
Operating flexibility	Some	Most	Most
Financial strength & flexibility	All	Most - but getting more difficult	Most - but conservative

Table 24 Philosophies and strategies - summary

Strategic positioning related to the maintenance of a well balanced set of business activities. Concerns such as these tended to be major concerns arising on a periodic basis, subject to regular review. Market flexibility related to the maintenance of a flexible approach to markets, and was achieved through such things as efficient facilities, flexible operations, multi-purpose facilities or vessels, efficient data bases and agency systems, a balanced approach to chartering, a balanced fleet, a low cost fleet, high market share, and a high quality service. Operating flexibility related to an approach to operations which permitted alternative methods of operation as conditions and circumstances changed.

Possible means of achieving it included such things as efficient facilities, flexible or multi-purpose ships, a balanced fleet, and equipment ownership. Considerable overlap existed between strategies to achieve both market and operating flexibility, and a division between the two is inevitably a little artificial. Financial flexibility generally related to the maintenance of adequate financial resources, or at least access to them, at all times. This was for both safety reasons and opportunistic reasons. In passing it is worth noting that the ideas of "Action Range" and "Endurance", developed by Derkinderen and Crum, appear to have much in common with these ideas on financial flexibility. Methods of achieving financial flexibility included such things as adequate financial resources, lines of credit, good quality earnings and good cash flow, conservative debt levels, and well financed assets.

In practice the extent to which flexibility existed, or was sought, and the areas of greatest emphasis, depended on the size and nature of the company, and its lines of business. Company size and wealth provided greater opportunities for Category 1 companies, in terms of the range of business activities in which they could engage. It enabled such companies to engage in strategic positioning through diversification, and to acquire high technology or other expensive or specialist lines of business. The first of these was seen as reducing corporate risk, irrespective of anything which might be said in finance theory about the lack of benefit (to shareholders) of diversification, and hence leading to higher quality earnings. The second provided a kind of barrier to entry to other firms, which in turn also helped in the maintenance of high quality earnings. Clearly smaller companies in the other two categories were generally unable to afford this luxury. Indeed, many Category 2 and most Category 3, companies had very limited diversification of interests outside of the bulk trades. The different degree of diversification found in the three categories had a considerable effect on ideas on flexibility. The diversified conglomerates were typically found to have considerable strategic and market flexibility. In many such companies, particularly where trades were more specialised, operating flexibility was more limited. Many of the Category 2 and 3 companies, typically involved largely in the bulk trades, had little strategic or market flexibility, but achieved considerable operating flexibility through the use of handy size general purpose ships. Such ships also gave flexibility with regard to the sale and purchase markets, since a large market for such ships existed, and they could typically be sold easily and quickly. Against this, it must be recognised that general purpose ships were seldom the lowest cost ships for particular services or routes. The concentration of many Category 2 and 3 companies on a small number of activities, especially when coupled with current market conditions, had caused many

such companies to move away from a reliance on operating profits, and to emphasise the sale and purchase of vessels at the right time, with resulting capital profits. Such profits clearly occurred on a less regular basis than the high quality earnings of category 1 companies. The sale and purchase markets were also used by these companies to maintain, replace and expand their shipping interests. Much more similarity of approach was found with regard to ideas on financial strength and financial flexibility. Almost all companies paid considerable attention to the preservation of adequate financial strength, so as to be able to survive unexpected shocks, or to take opportunities that came along. This point will be dealt with in more detail in later sections.

The emphasis of Category 1 companies on quality earnings was also found to influence other philosophies and strategies. Category 1 companies tended not to purchase assets on a speculative basis, but to acquire them for long term use. Indeed, Category 1 investment decisions tended to be based on some kind of fleet concept, rather than on individual projects. By comparison Category 3 companies appeared far more likely to acquire individual assets on a speculative basis, with the aim of making substantial profits on a subsequent sale of that asset. The whole approach of Category 3 companies was found to be more opportunistic than that of the other two categories. This should not be taken to imply that Category 1 and 2 companies did not behave in an opportunistic way, but that their philosophy was likely to be more concerned with operating profits, rather than capital profits.

The relationship between quality of earnings and the type of business engaged in was another area in which the three categories behaved differently. For category 1 companies the quality of earnings appeared paramount. Such companies typically would only engage in lines of business with high quality earnings. If the quality of earnings dropped to an unacceptable level the category 1 company was likely to drop that particular line of business. Given the earlier comments about strategic flexibility it was not surprising to find that potential problems were identified quite early, and alternative lines of business were examined on a regular basis. Category 2 and 3 companies were generally more restricted to a smaller range of current and potential activities, and typically had to accept lower quality earnings. This difference is fundamental, and needs to be clearly recognised in considering attitudes and approaches to investment decisions.

2.3 Areas of Activity within Shipping

The major areas of activity within shipping, sub-divided by category, are shown in table 25.

This table reinforces many of the comments made in the previous section. Only the largest companies were able to undertake the massive investment needed for the major liner trades. This was also generally true of the specialist trades, with a small number of notable exceptions. Problems of ease of entry and overtonnaging had caused many category 1 companies to withdraw from the bulk trades, since the quality of earnings was thus perceived to be low. Interestingly, the trend in UK category 1 companies suggests further reductions in the proportion of their activities which are shipping oriented, for much the same reasons. The recent spate of spin-offs in the USA reflects similar attitudes, but a different approach.

Area of Activity within Shipping	Category 1	Category 2	Category 3
Liner Trades	Substantial number	Reasonable number but smaller scale	Very few
Bulk Trades	Very few	Majority	Almost all
Specialist Trades	Reasonable number	Very few	None

Table 25 Areas of activity - by category

2.4 Corporate Planning

The nature and content of the Corporate Planning Systems found in the study reflected the philosophies, strategies and areas of activity. A summary of the approach is shown in table 26.

Corporate Planning	Category 1	Category 2	Category 3
Formal system of corporate planning	Virtually all (exceptions in bulk shipping)	Few	Very few
Macro-economic factors analysed	Virtually all	Some	Very few
Analysis of applications to shipping	Virtually all	Some	Some
Supply side analysis	Only bulk companies	Most	Virtually all
Competitor analysis	Virtually all (except bulk)	Very few (only those not in bulk trades)	Virtually none
Analysis of own company data	Some	Virtually none	Virtually none

Table 26 Corporate planning and related analysis

For category 1 companies it is clear that greater complexity of the business activities, together with a desire for high quality earnings, caused such companies to develop fairly sophisticated planning systems, typically covering periods of five years or so. Plans were usually based around the three main financial statements. They almost invariably included cash flow or debt service figures. A five year planning period was generally considered to be long enough to cover most important strategic, market and operational issues, yet not so long as to unduly reduce confidence in the figures being used. While the planning process was undoubtedly a positive process, searching out regular earnings, considerable emphasis was also placed on the negative aspects, namely the early identification of potential problems, and concern with downside risk and the avoidance of shocks. These category 1 planning systems generally included detailed analysis of macro-economic factors, applications of economic trends and figures to the shipping industry (basically demand analysis), supply side analysis, competitor analysis, and an analysis of past and present in-company data. Figure 26 is slightly misleading with regard to supply side analysis for category 1 companies. Virtually all bulk operators in category 1 did a detailed supply side analysis, on a global basis, for particular types of ships (or substitutes). For the liner companies and specialist companies the emphasis moved to a detailed competitor analysis. However, implicit in such an analysis were supply considerations. Overall, it is clear that, for category 1 companies the Corporate Planning Systems provided a firm basis for all strategic decisions, and for subsequent project or individual decisions. Projects were considered in an overall strategic context very early on in the planning stage. Precisely when decisions to invest were made was thus difficult to ascertain. Subsequent project analysis in later stages may merely confirm or rubber stamp earlier "in principle" decisions which had been made along strategic lines.

Few formal or sophisticated planning systems were found to exist in companies in categories 2 or 3. Only three of the category 2 companies had formalised systems, although another four had conducted significant one-off strategic analyses in recent years, prior to major investment or disinvestment decisions. Two category 3 companies had something approaching a formal plan, while another two adopted informal systems along similar lines. The range of strategies and activities open to category 2 and 3 companies was generally much smaller than that of category 1 companies, and the need for planning was perceived to be rather less. Current difficulties in the shipping markets were causing some companies to concentrate more on short term considerations to do with survival than with longer

term planning. A significant number of companies, particularly in category 3, also expressed the view that formal planning was not consistent with their way of doing business, i.e. careful use of the sale and purchase markets. In general the reasons for the difference in approach to planning systems between category 1 and the other two categories could be attributable to resources, forecasting difficulties, the type of business activity in which the companies engage, and differences in philosophy with regard to the way of carrying out their business.

For most category 2 and 3 companies detailed economic analysis was thus rare, although attempts to ascertain likely demand levels for shipping services, particularly relating to different types of vessel, were more common. Detailed supply side analysis, on the other hand, was common, and often formed one of the most important aspects of the decision. Competitor analysis was very rare. The main reason for this was that most such companies were involved in the bulk trades, where global figures for demand and supply were seen as the most important factors, since virtually all bulk operators were seen as potential competitors, and market entry and exit was relatively easy. This must be compared with the rather more oligopolistic nature of the liner industry and other specialist trades. It also needs to be recognised that since few category 2 or 3 companies chose to afford large planning departments, reliance for obtaining market information was placed on such things as press articles, brokers reports, and related information.

The absence of formal planning systems for most category 2 and 3 companies should not be seen as an indication of a lack of awareness about the market in which owners were operating. In general it must be said that most companies kept reasonably well aware of market conditions, or any other factors which might affect their current or potential activities. They were thus usually fairly well informed on such things as:

- (i) market trends in terms of freight rates, demand levels, charter prices
- (ii) supply available and on order
- (iii) political factors relating to particular trades

In addition, a considerable amount of detailed thinking appeared to go on, albeit on an informal (or even implicit) basis, with regard to such things as the type of vessels to be used, chartering policy, and financial policy, particularly the ability to service debt. Hence, while the degree of "planning" was somewhat limited for category 2 and 3 companies, a fairly high degree of market awareness was found to exist, together with a certain amount of strategic thinking. This will be discussed in more detail in

the next section.

2.5 Project Appraisal

This study had, as one of its aims, the ascertainment of the extent and nature of use of the various appraisal methods put forward in finance theory. While the detailed questioning on appraisal methods revealed a substantial use of these techniques, the study revealed that the investment and financing "decision" was in reality a multi-stage decision process, in which the traditional techniques played a relatively minor role. These findings are consistent with the work of writers such as King (1975) and Pinches (1982), referred to earlier on page 71.

The major findings of the study with regard to project appraisal are summarised in table 27.

Project Appraisal	Category 1	Category 2	Category 3
Analysis of system or fleet	Virtually all with exception of bulk companies	Most liner companies No bulk companies	Virtually none
Analysis of individual vessels	Only few bulk companies	All bulk companies	Virtually all
Project appraisal techniques			
- Payback	Majority	Few	Reasonable number
- Accounting rate of return for individual projects	Very few	Few	Some
- Accounting rate of return effect on overall rate	Virtually all	Few	Virtually none
- Net present value	Reasonable number	Few	Few
- Internal rate of return	Majority	Relatively few	Relatively few
- Break-even freight rates	Virtually none except bulk cos.	Virtually all bulk cos.	Virtually all bulk cos.
Analysis of effect of project on overall results	Virtually all	Reasonable number	Few
Analysis of effect on overall liquidity	Virtually all	Most	Few
Clear understanding of debt service commitments	All	All	All

Table 27 Project appraisal methods - by category

This table highlights a number of important points, which will be dealt with below or in later sections. The most important factors were as follows:

- (i) In a substantial number of companies "projects" related to some kind of system or fleet concept, rather than to individual vessels.
- (ii) The traditional appraisal techniques appeared not to be used consistently or uniformly.
- (iii) Substantial differences in approach arose between:
 - (a) large and small companies
 - (b) companies involved in the liner trades and the bulk trade.
- (iv) The analysis of the effect of individual projects on corporate figures was an important part of the appraisal.
- (v) The appraisal techniques used were set in the context of a background philosophy or approach to business, and frequently, a detailed set of supporting information and planning.

Most larger companies and virtually all companies involved in the liner trades, (i.e. category 1 and some category 2 companies), adopted a "system" or "fleet" approach to investment. Sometimes such things as entry into a consortium might be regarded as a project. Where a fleet or system concept was in use it was clear that the strategic considerations had usually been taken into account at the planning stage, and decisions taken accordingly, on an overall basis. At some stage detailed project figures would typically be run through, but the major decision to commit resources to a particular fleet concept had already been made, after due consideration of all the strategic factors, at the planning stage. Where comprehensive planning systems were found to be in operation, most new ventures could be seen to have "grown out" of the plan. Occasionally single projects, or other opportunities, arose which had not been identified within the normal planning system. The analysis of projects of this type was inevitably more ad hoc in nature, but strategic factors were given considerable attention, at the same time as individual project figures were being calculated. Clearly then, at whatever stage projects were introduced in these large or liner companies, strategic considerations were given considerable attention. For projects dealt with within the normal planning systems, detailed project analysis frequently took place after the broad strategic considerations had been discussed and established. Under such circumstances it becomes relatively easy to attach greater importance to this latter phase than is actually justified.

Virtually all of the smaller companies, and companies operating in the bulk trades (i.e. mostly category 2 and 3, and a small number of category 1 companies) appraised projects on an individual basis. Once again, however, a certain amount of strategic analysis went on either prior to, or during,

the decision making process. As was pointed out in the preceeding section, most category 2 and 3 companies analysed their markets in some degree, although the level of sophistication was generally less than that of the category 1 companies. Undoubtedly most of these companies had a clear view of the current and anticipated supply/demand relationship for particular types of vessel, together with freight rates and operating costs. As has already been pointed out, however, virtually no competitor analysis was carried out, principally because of the nature of the bulk markets. The emphasis was generally on obtaining ships which would provide some kind of competitive advantage, through such things as being in short supply, lower cost, flexible operations, etc. Indeed, a significant part of the analysis for most category 2 companies in the bulk trades related to ship characteristics, and the search for the "right" ship. For category 3 bulk companies the analysis concentrated on a detailed study of the market with a view to identifying opportune moments for buying and selling ships and with identifying potential shortages in the market.

The use of the traditional appraisal techniques varied across categories. Detailed forecasts of costs and revenues, a necessary part of the appraisal process for most of the techniques, occurred unevenly, as is evidenced by Table 28. This table shows the number of companies making forecasts of costs, revenues and disposal values, and the period for which forecasts of costs were made.

Project figures forecast	Category 1 (19 companies)		Category 2 (18 companies)		Category 3 (12 companies)	
	Costs	Revenues	Costs	Revenues	Costs	Revenues
None	0	1	0	6	0	7
1 - 2 years	0	0	8	3	0	0
3 - 5 years	2	1	3	2	2	1
5 - 10 years	1	1	3	1	2	2
Over 10 years	14	14	4	3	1	0
Unspecified	1	1	0	3	2	1
Other - Various to life	1	1	0	0	0	0
Current figures known but no forecasts done	0	0	0	0	5	1
Disposal values	9		1		3	

Table 28. Project figures forecast

It is clear from this table that category 1 companies appeared to consistently adopt processes which would permit the use of the traditional techniques. The position with regard to the other two categories is less encouraging. Rather more than half of the category 2 and 3 companies would have found it difficult to use the traditional appraisal techniques, even had they wanted to, without reasonable cash flow forecasts.

Appraisal Method	Category 1 (19 companies)		Category 2 (17 companies)		Category 3 (12 companies)		Total (48)	
	No.	%	No.	%	No.	%	No.	%
Payback	11	58	4	24	7	58	22	46
ARR for individual projects	7	37	4	24	5	42	16	33
NPV	9	47	5	29	3	25	17	35
IRR	14	74	6	35	3	25	23	48
Use of at least one discounting method	16	84	7	41	3	25	26	54

Table 29 Use of specific techniques

Table 29 summarises the use of specific techniques across the categories. It indicates the number of companies in each category using the traditional methods, together with the percentage for each category. As has already been implied, these results do not suggest that the traditional techniques form a particularly important part of the decision process, other than possibly in category 1. The proportion of category 1 companies using at least one of the discounting methods was high, at 84%. As can be seen from the table, IRR was found to be the more popular of the two discounting methods, principally because of problems of choosing an appropriate discount rate. The use of discounting techniques was low in both category 2 and 3. In passing it should be noted that the figures included above for category 3 discounting techniques were lowered from the original answers received, after subsequent questioning displayed either inconsistency, or that the techniques were not used regularly. Indeed, considerable confusion was revealed in many companies in the study, not merely category 3 companies, over the choice of an appropriate discount rate. This point will be picked up in more detail in the next section.

The use of multiple methods of appraisal was fairly common, as can be seen from table 30.

Number of traditional methods used	Category 1 (19 companies)		Category 2 (17 companies)		Category 3 (12 companies)		Total (48)	
	No.	Cum %	No.	Cum %	No.	Cum %	No.	Cum %
Four methods	2	10	1	6	3	25	6	13
Three methods	7	47	3	24	1	33	11	35
Two methods	4	68	2	35	2	50	8	52
One method	4	89	2	47	3	75	9	71
None of the traditional methods	1		9		3		13	
Unclear	1						1	

Table 30 Multiple use of appraisal techniques

This table reinforces the view that individual appraisal techniques were given relatively limited weight, but that decision making was a multi-stage, multi-criteria, process. The table also indicates the relative extent to which the traditional techniques were used in the category 1 companies, as compared with the other two categories.

Where discounting techniques were used it is interesting to note that the figures used often included financing aspects of the decision. Table 31 sets out the basis of the discounting process used across the categories. In passing, it is worth noting that in a number of cases where payback was used, the figures used in the calculation were also inclusive of debt finance.

Basis of discounting	Category 1	Category 2	Category 3	Total
Operating flows only	8	0	1	9
Operating flows and financing flows	6	7	2	15
Both calculations	2	0	0	2
Total	16	7	3	26

Table 31 Basis of discounting - by category

A further appraisal method used fairly extensively was the calculation of break even rates. A total of 19 companies calculated break even rates for new ventures, 4 from category 1, 8 from category 2, and 7 from category 3. Of this number, all but one were involved in the bulk trades. One liner company emphasised the importance of knowledge of break-even utilisation rates. Three other

category 1 companies emphasised careful examination of the cost/revenue relationships as an important criterion for the appraisal of new projects. These latter figures were surprisingly low, and are almost certainly misleading. As will be seen from the next section, considerable use was made of sensitivity analysis by the category 1 companies. The use of such techniques enable a better picture of project risk to be built up than a single break-even figure, and give an indication of earnings at different freight or utilisation rates. Implicit in such an approach is a clear understanding of break-even levels, and cost/revenue relationships at different levels of utilisation. Overall an examination of the cost/revenue relationship under differing assumptions appears to be an important part of the appraisal process. Other than the use of required freight rates, very little use appeared to be made of the industry specific techniques, such as the minimum average annual cost method and others outlined in chapter 3.

A further important part of the appraisal process relates to the impact of projects on overall corporate figures. Virtually all category 1 companies had formal corporate planning systems, so that new projects were automatically fed into the corporate figures, and their impact assessed. A philosophy of searching for high quality earnings meant that any project with a significant unfavourable impact on corporate earnings quality was likely to be rejected. Hence, while only a small number of category 1 companies specifically identified the examination of project earnings profiles as an important part of the appraisal process, there is little doubt that the impact on corporate figures was an important part of the appraisal process.

Fewer of the category 2 and 3 companies placed as much emphasis on the analysis of the effect of individual projects on corporate figures. This was partly attributable to lower concerns with the quality of earnings, partly to the greater emphasis on individual projects. However, considerable importance was attached to the analysis of liquidity risk. Thirteen of the category 2 companies and nine of the category 3 companies analysed debt service commitments and potential liquidity problems for several years ahead. In most cases this analysis was corporate, rather than project oriented. The main aim of the analysis was to ensure that adequate liquidity would exist to see the companies through a period of lean years. Indeed, in the relatively few cases where detailed liquidity analyses did not take place the reason was typically either that new ventures were secure and self liquidating (i.e. backed by secure charters), or considerable liquid reserves were already available.

Overall, consideration of the above comments, and those of the previous section on corporate

planning, make it clear that the traditional techniques do not play a major role in decision making. For category 1 companies they appear to represent a small, but necessary, stage in the analysis. For the other companies the evidence suggests that their role is minor, with decisions frequently being made without the use of any of the standard techniques. The importance of the philosophies behind the business, the lines of business, the nature and detail of the planning systems (or associated economic and market analysis) all provide inputs to the decision making process. The traditional appraisal techniques may, indeed, do in many companies, form part of the overall analysis, but the over-riding importance of the other factors needs to be recognised. Equally important, and in many cases more important, were the overall implications of projects on corporate figures, especially liquidity, and a clear understanding of cost/revenue relationships.

2.6 Risk

Questions on attitudes to risk and methods of dealing with it yielded fairly clear answers, with substantial differences being found across the three categories. Table 32 summarises the main features identified.

Risk in Investment Decisions	Category 1	Category 2	Category 3
Analysis of Corporate risk	Virtually all	Few	Few
Very broad consideration of risk	Few	Most	Reasonable number
Analysis of detailed project risk	Some	Few	Virtually none
Analysis of liquidity risk	Virtually all as part of corporate plan	Virtually all	Virtually all
Use of sensitivity analysis	Most	Some	Some
Use of other analytical approaches to risk	Few	Virtually none	Virtually none
Avoidance of currency risk	Most	Virtually all UK companies	Some

Table 32. Risk in Investment Decisions

The first, and perhaps most important, point to note is that, in general, risk analysis tended to relate more to corporate risk than to project risk. For category 1 companies this analysis tended to cover two areas:

- (i) Business risk - relating to a search for a balanced diversity of interests, and the maintenance of high quality earnings.
- (ii) Corporate financial risk - relating to the ability to service debt, raise further debt, and cover operating costs.

A regular review and analysis of business risk, in terms of continued high quality earnings, was found to occur in virtually all category 1 companies. This was manifested in the search for a balanced set of diversified activities, with a fairly continuous process of eliminating areas of business with potential problems, and introducing further areas of business with the potential of high quality earnings for some time. Category 1 companies did not like shocks, and this overall approach to business risk is completely consistent with the earlier sections on philosophies and strategies, and areas of activity. Few category 2 or 3 companies were able to take the same approach, since their ability to diversify was much less. They were inevitably much more locked into particular industries. Their approach to risk was somewhat more philosophical, and was generally restricted to broad considerations in terms of markets, politics and related shipping activities.

Much more commonality of approach was found with regard to the analysis of corporate financial risk. Virtually all companies in the study analysed liquidity and potential liquidity problems in detail. Category 1 companies typically did this as part of their corporate planning system. Most of the other companies undertook fairly detailed analyses of liquidity either on a regular basis, or whenever a substantial investment decision was being considered. It is of interest to note that no cases were found of any attempts to estimate costs of a possible bankruptcy. Rather the approach was one of attempting to ensure that the liquidity position was strong enough to carry the companies through a series of adverse events. If liquidity was not considered high enough, investments were typically not proceeded with. Overall the aim of this kind of corporate risk analysis appears to have been the identification of the kind of circumstances which might pose problems for the company over the next few years or so, in terms of markets, profitability and liquidity. For category 1 companies risk analysis was an essential and integrated part of the corporate planning system. For category 2 and 3 companies greater emphasis was typically placed on the use of risk reduction techniques with regard to their business activities (e.g. purchase of general purpose ships, purchase at bottom of market etc.), and detailed analyses of the corporate financial risk.

The results of this study with regard to the analysis of individual project risk are perhaps more

surprising. A small number of companies, mainly in category 1, made attempts to evaluate project risk. Elsewhere, detailed project risk evaluation was extremely rare. Quantitative and analytical approaches to risk (other than sensitivity analysis) were seldom identified. Clear reasons for the lack of such analysis were seldom given, but general comments suggested that difficulties of forecasting, and the danger of a kind of pseudo-accuracy being attached to such calculations, were the two most important factors. For the smaller companies lack of resources and differing levels of expertise were also important. Clearly reasons such as these have some validity. Nevertheless, it is surprising, and not a little disconcerting, to find that well documented techniques of project risk analysis appear to play little part in the overall analysis. Even if the argument is accepted that risk relates principally to the corporation, it would still appear useful to also evaluate project risk. This lack of emphasis could well mean that quite risky projects are accepted because they have no significant risk for the corporation overall. Such an approach is quite valid, if the risk of the project is actually recognised, and appropriate returns are forthcoming. The impression gained from most interviews is that this latter point was not actually recognised. It would seem appropriate for a corporation to analyse in some detail both corporate and project risk, even if the former is the more important.

As has already been indicated, the only technique for analysing risk which was used widely, was sensitivity analysis. The greatest use of this technique was undoubtedly found in the category 1 companies (17), but approximately one third of the companies in the other two categories (6 in category 2, 5 in category 3) also used it, albeit typically less formally, and covering a much smaller number of variables. The major advantages of sensitivity analysis over other techniques of risk analysis were seen as twofold:

- (i) it enabled problem situations to be clearly identified, with the result that judgements could be made about their likelihood, and/or preventive action (if possible) could be taken at an early stage;
- (ii) it did not require a precise judgement to be made of the likelihood of single eventualities, a factor which was seen as being important in a volatile market.

The most common factors analysed were changes in utilisation rates, freight rates, operating costs, and interest rates. Other fairly common factors analysed were exchange rates, growth rates, and disposal values.

One final point with regard to risk which emerged was that most companies, certainly across category 1 and 2, preferred to avoid currency risk if possible. Few U.S. companies identified currency

risk as a problem. Some category 3 companies preferred to avoid it, while others had a more open mind.

2.7 Financing and Capital Structure

Detailed questioning on financing and capital structure revealed the broad trends set out in table 33.

Financing Aspects	Category 1	Category 2	Category 3
Investment & Financing separate	Approx. half	Approx. half	Relatively few
Method of Finance			
- yard credit	Most	Most	Most of those buying new ships
- bank loans	Most	Most	Virtually all
- corporate loans	Reasonable number	Very few	Virtually none
- leasing	Reasonable number	Very few	Virtually none
- new equity (other than retentions)	Few	Virtually none	Virtually none
Financial arrangements influencing choice of yard	Most	Most	Most - where new building
Maximum amount borrowed	Approx. 2/3	Majority	Some
Period of loans			
- over 10 years	Virtually all	Some	Very few
- 5 - 10 years	Few	Most	Most
- under 5 years	Virtually none	Very few	Few
Limit to total amount of debt taken up	Most	Minority	Majority
Target debt/equity ratio	Very few	Very few	Virtually none

Table 33 Financing aspects of investment decisions

Interestingly, the separation of the investment and financing aspects of capital acquisitions was not found to be as clear cut in practice as it is in theory, even for category 1 companies. In practice much closer links were found to exist between the two, with financing being seen as an important part of the decision whether or not to invest. Even where separation of the two existed, the main reasons for the separation often appeared to be bureaucratic.

Considerable confusion was identified with regard to this debate and the choice of discount rate, and in a surprisingly large number of cases clear misunderstandings were found to exist. Perhaps the

most common was the discounting of cash flows including the raising and servicing of debt by a discount rate reflecting the cost of borrowing. This will be examined in more detail in section 2.4 of the next chapter.

Concerns with financing generally related to all or some of the following:

- (i) the availability of finance for new projects
- (ii) whether the use of subsidised finance could lead to larger gains
- (iii) whether the decision would be different under alternative financing packages
- (iv) whether the project would pose any problems in terms of bond rating, share price, liquidity or long term survival.

Substantial differences were found to exist across the three categories with regard to the finance actually used for vessel acquisition. Yard credit was used wherever possible, but few category 3 companies were in the business of acquiring new vessels, so the relative importance of yard credit was less for category 3 companies. Bank loans were used by most companies, but category 1 companies typically used such loans for top up finance, or to stretch terms obtained from yards. By comparison category 3 companies used bank loans as their major source of borrowings, and financed much of the cost of second hand vessels from this source. Corporate loans were confined almost completely to category 1 companies, as were leases and new equity issues. Leasing was not generally used by category 2 or 3 companies principally because of the loss of flexibility which ensued. New equity issues were not particularly important even in category 1, and were not favoured with the other two categories because of the potential loss of control of the company. Most companies making decisions about new buildings were influenced in the choice of shipyard by the financial arrangements on offer.

Periods of finance were generally longer for category 1 companies, with most being able to obtain bank finance for periods in excess of ten years. By comparison, few category 3 companies were able to obtain funds for this period, with terms of 5 - 8 years being much more typical.

Another area in which differences existed between the categories was with regard to limits to the amount of debt taken up. Given the nature of most category 1 companies, it was not unduly surprising to find that most such companies did have limits to the total amount of debt taken up. Few such companies had debt equity ratios (using $\text{debt}/(\text{debt} + \text{equity})$) in excess of 50%, and approximately 40% of them had debt equity ratios of less than 40% in recent years. What was perhaps more

surprising was that most category 3 companies had self imposed limits on the amount of debt taken up. Furthermore, while actual debt equity ratios were seldom obtained for category 3 companies, the responses indicated that a very conservative approach was adopted in most such companies. The main rationale for this again relates to the philosophies and strategies identified earlier, especially that of buying vessels at the bottom of the market and selling them at or near the top. Such a policy may well commit a company to a long period of operations with low or negative profits and unfavourable cash flow patterns. A sound financial basis and relatively low debt burdens were seen as essential parts of such a strategy. A minority of category 2 companies envisaged actual or potential limits to the total amount of debt taken up. This may reflect the dilemma in which many such companies found themselves, in trying to emulate performance of the category 1 companies, with a much lower capital base.

Virtually no companies in the study had any clear target debt/equity ratios. Indeed, for many category 2 and 3 companies it was clear that debt equity ratios had changed quite significantly from year to year, as the result of different investment decisions and changing market conditions. Overall, capital structure appeared to be the result of a variety of factors, rather than a positive decision variable. The most important factors in determining or influencing capital structure appeared to be the following:

- (i) For public companies, the perceived effect of capital structure, and changes therein, on share price. Nevertheless, it is clear that most companies felt that provided they operated within broadly acceptable bands, that particular capital structures, or changes therein, had little impact on share price.
- (ii) The relationship between new investment opportunities and the availability of internal funds. For category 1 companies, particularly the larger companies, self financing ratios were high, earnings quality was high, and dividend payout ratios tended to be relatively low, enabling the overall levels of debt to be kept under control. For category 2 and 3 companies, particularly those engaged mainly in shipping, poor quality earnings and substantial re-investment costs tended to impose greater debt burdens. Few category 1 companies needed to borrow for other than expansionary projects. Companies in the other two categories were frequently forced to gear-up simply to replace existing assets.
- (iii) The perceived effect of capital structure on bond ratings, and on the ability to finance further assets (or re-finance existing assets). This appeared to be more of an influence for the larger

companies, which tended to go to the market generally for funds. For the remaining companies, capital structure per se did not appear to be a particularly significant factor in terms of raising further finance. The availability of finance was seen to depend upon the quality of future earnings and the adequacy of the security which could be given to lenders.

(iv) The relationship between profitability and debt service requirements, with interest cover sometimes being used as an imperfect surrogate (at least in category 1 companies). Considerable emphasis was placed on this particular aspect, particularly for companies with large investments in shipping, where debt service requirements are often substantial. For companies which were better diversified, and which had higher quality earnings, the concerns were generally less pressing. For category 2 and 3, which were typically more involved in shipping activities, the concerns were more with the relationship between profitability and related cash flow, together with liquid reserves, and debt service requirements. In considering appropriate levels of debt, it became clear that, beside the level of debt itself, the repayment profile of debt, and the ability to re-finance debt, were undoubtedly important. Precise data were seldom obtained on repayment profiles from any companies other than those of category 1. However, where such profiles were obtained, it became clear that considerable variations existed, with companies with extensive shipping interests generally having less favourable profiles than oil majors or diversified conglomerates. The debt service commitments associated with relatively short term repayment profiles were greater than those with longer term profiles. This in turn imposed greater pressure on the relationship between profitability and debt service ability, and makes clear that repayment profiles and ability to re-finance debt are also important aspects of the capital structure decisions.

(v) The nature of the assets being funded. The point has already been made that loans were only made if adequate security existed. Security rests partly in good cash flow patterns, but ultimately, in the event of a default, on the current market value of the corporate assets, either on a secured or a general basis. Certain assets, such as ships, are fairly easy to sell, whereas others, e.g. production equipment/facilities, are not. Inevitably, therefore, assets such as shipping and property are likely to sustain higher levels of gearing than many other types of asset, though clear limits exist to the amount of effective security provided even by such assets.

(vi) Market fashion and changing economic conditions. Several category 1 companies implied that the financial markets now had different attitudes towards gearing levels to those which existed several

years ago. Certainly there appeared to exist in some of these companies a belief that the market is now much less happy with high gearing levels than it once was. Whether this perceived change is the result of changes in market fashion, or simply a response to more volatile and difficult economic conditions, is unclear. The possibility of distinct changes in market perceptions is nevertheless a factor to which most category 1 companies needed to pay attention. Indeed, the possibility of changing economic conditions affecting desired capital structure clearly existed for all such companies, not simply those of category 1. Nevertheless, the high quality earnings associated with category 1 companies appeared generally to lead to more stable capital structures over time. For companies in category 2 and 3, far greater volatility appeared to exist, since the range of business activities was much smaller. Capital structure ratios which might have been perfectly sustainable for a shipping company in the 1960s and much of the 1970s are now likely to leave such a company in an extremely difficult position. The more exposed a company is to single lines of business the greater the variation is likely to be in capital structure ratios, as economic conditions change.

2.8 Overall Summary

The results of this study indicate that, within the shipping industry, the investment and financing decision is the result of a complex process. Decisions appear to have been reached as a result of a multi-stage, multi-criteria evaluation process, with particular decisions reflecting the emphasis within particular companies. Nevertheless, broadly similar patterns of behaviour were identified for certain groups or categories of company, reflecting such things as size and the nature of activities in which these companies were involved. Considerable differences in approach were found across the different categories, as has already been pointed out, but the following factors appear to have influenced the investment and financing behaviour of most companies in the study.

- (i) Broad objectives to do with profitability generally existed with substantial differences being found in attitudes towards earnings quality and dividends across the different categories. Share price concerns, but not share price maximisation, existed to some extent, across most public companies. In certain categories personal or family objectives were important. Certain companies had a short term objective of survival, because of particular current difficulties.
- (ii) A number of underlying philosophies were found, with considerable differences being found across the three categories. The most important of these related to quality of earnings, and the range

and type of activities engaged in. Considerable emphasis was placed on the preservation of flexibility, again with differences being found in the implementation of this idea across the categories.

(iii) The process of data collection and analysis was generally complex, with considerable emphasis being placed on:

(a) the collection and analysis of economic and market data, though the amounts of information, and its emphasis, varied considerably by category and type of activity. Information of this type was typically associated with a considerable amount of strategic evaluation or re-evaluation of the types and range of activities to be pursued in the future;

(b) a certain amount of detailed forecasting of costs, revenues and associated cash flows. Again considerable differences in the extent to which forecasts were made, and the confidence with which they were viewed, were found across the categories;

(c) a certain amount of use of the traditional techniques of appraisal. Again, differences in use arose across the categories. In general, however, the importance attached to such techniques was low, and they represented only a small part of the total decision making process;

(d) a certain amount of use of other techniques of appraisal, notably techniques such as break even analysis, sensitivity analysis, and others concerned with the cost/revenue relationship;

(e) the evaluation of the impact of individual projects on corporate figures. Again, a certain amount of variation by category was found, but concerns with corporate liquidity and debt service were almost universal;

(f) a certain amount of risk evaluation, generally related to diversity of interests and/or flexibility of operations, and corporate liquidity risk. Little project risk analysis was undertaken.

(iv) Considerable concerns existed with regard to the funding of investments. The separation of the investment and financing decisions was seldom clear cut. Concern with capital structure targets per se was virtually nil, although limits to the amount of debt were common. Capital structure was seen as being dependent on the following factors.

- (a) the perceived effect of capital structure on share price
- (b) the relationship between investment opportunities and availability of internal funds
- (c) the perceived effect of capital structure on bond ratings
- (d) the relationship between profitability and debt service
- (e) the nature of the assets being funded

- (f) market fashion and changing economic conditions.

Chapter 12

Theoretical Implications of the Study

1. Introduction and Aims of the Chapter

This chapter aims to relate the findings of this study to the literature reviews of Chapters 3 and

4. In particular it aims to:

- (i) assess the implications of this study for the theory of finance, and its associated criticisms, outlined in Chapter 3;
- (ii) suggest the importance of establishing links between the theory of finance and that relating to corporate strategy, and to identify areas of linkage and overlap between these two areas;
- (iii) outline a descriptive model of the way in which investment and financing decisions are made in the shipping industry, with different approaches being identified for different categories of company or types of activity.

The chapter will conclude with the identification of a number of limitations of this study, and suggestions for future research. Where appropriate, comparisons will be made throughout the chapter of the findings of this study and other empirical studies in this area, previously summarised in Chapters 3 and 4.

Perhaps the most important limitation of this study, which needs to be recognised in order to put the assessment of finance theory into a proper context, is that this work concentrates on investment and financing decisions by managers and owners working within a business organisation, with an emphasis on investment in real assets. The financial markets and associated securities (other than banks) were not included specifically within the study, and the behaviour of investors, whether on a positive or a normative basis, was not examined. The emphasis is thus on managerial aspects of investment and financing decisions within firms. Even here, further limitations must be recognised. The approach to questioning used emphasised the rational aspects of planning and finance. No systematic

attempt was made to incorporate motivational, behavioural or political aspects of decision making in the survey, though in some cases information on these aspects emerged from the discussions. Given the criticisms of rational planning which were identified in chapter 4, this omission could be seen as a serious limitation of the study. However, the study does enable us to identify the kinds of approach used in practice, the processes gone through by managers in reaching decisions, the range of economic and financial inputs into the decision making process and the evaluation methods of most significance in making decisions. Clearly the decision making process is set in the context of world wide markets for both the services supplied and demanded, and the finance available. As such it should reflect the influence of investors. An approach along these lines enables us to establish the perceived relevance of finance theory in the situations described, and to identify alternative priorities and approaches adopted by managers. If the perceived relevance is small, then serious questions need to be asked either about the continued emphasis of this approach in the teaching of, and literature on, the subject, or about the education and training given to most managers. If the perceived relevance is of some substance, this study will have served to provide some empirical support for the theory, at least in relation to a specific industry. In fact it is the former which appears to be true. This has a number of potential implications, and suggests the need for some changes of emphasis within the area of finance; greater integration of ideas from other theories and from practice; the development of appropriate alternative theories or models of behaviour; and further research. These implications are explored further in this chapter.

2. Assessment of Finance Theory

2.1 Objectives

Finance theory is based on an assumed objective of share price maximisation. This has the considerable advantage of providing a unique theoretical objective, against which all finance decisions can be analysed in a systematic way. Whether this happens is more doubtful. Detailed questions were thus asked of all companies in the study about the extent to which the objective of share price maximisation existed. The findings are clear. In the public companies, concerns with share price or

shareholder relations were real, particularly with regard to share price as an offensive or defensive factor in takeovers. It might, therefore, be argued that share price concerns act as a constraint on decisions. While this may be true, very few examples were found of situations where such considerations had seriously affected a decision. Share price maximisation did not appear to be viewed by managers as an operational objective. As indicated in chapter 11, concerns with share price were generally dealt with by a concentration on high quality earnings and the achievement of a balanced diversity of interests. Findings such as this are consistent with both the American studies referred to in chapter 3 (Page 73) and other approaches e.g. the stakeholder approach, referred to in chapter 4, namely, that managers have multiple goals and that share price maximisation is frequently considered to be less important than other goals. Possible reasons for this appear to relate principally to problems of application, in that decision makers were clearly not confident either of their ability to forecast correctly in a volatile market, or that the market would actually convert the available information into an appropriate share price. A great deal of uncertainty and cynicism existed with regard to the actual process of share price determination. Much of this cynicism echoed the kind of criticisms made by writers such as Franke (1981), and Derkinderen and Crum (1981), summarised on pages 59 and 60. Under such conditions the concentration on quality earnings could enable managers to be philosophical about the share price, which could then be assumed to take care of itself. In fact, as has been seen, other strategic and financing considerations were also seen as being relevant, but share price remains the result, rather than the target. The situation in the private companies was even clearer than for the public companies, with share price concerns, let alone ideas on share price maximisation, being almost non-existent.

Whether decision makers should take such an approach is a different issue. Supporters of finance theory would no doubt argue that the objective of share price maximisation should be pursued since only in this way can decisions be made which reflect the optimal use of economic resources. The fact remains, however, that share price maximisation was not found to be an appropriate or operational objective in this study. In passing, it is worth noting that a number of examples were found where the size and bureaucracy of some of the category 1 companies posed effective barriers to the implementation of traditional theory, even had such companies wished to adopt the traditional approach, (e.g. the use of divisionally set targets).

Reference has already been made to the work of Quinn (1977), and Carter (1981), on reasons

why managers do not use the theoretical models, or formally set and announce objectives or targets. Some support for these views was found in this study, in that many companies were found to have strong reservations about the use of such objectives and targets. The main reasons were related to the volatility of the industry, and its associated forecasting difficulties, which made forecasts and targets rather risky ventures, since they were almost certain to be wrong. Confidentiality of decision making also tended to mitigate against the use of detailed and formal targets. Having said this, it must be emphasised that the above reservations tended to "emerge" from the discussions with a number of companies, and were not the result of formal or structured questioning. Nonetheless, it is interesting to note that the reasons given above are consistent with those provided by Quinn and Carter. Further research on this particular area appears to be potentially useful.

The findings of this study are also consistent with many of the other criticisms of finance made in Chapter 3. Perhaps the most notable in the area of objectives are the works of Gordon (1981), Spronk (1981), Zeleny (1981) and Schmidt (1981). Gordon's views on the importance of objectives to do with profitability and security, and the consequent effect on strategies, particularly diversification, were found to have considerable empirical support. Nevertheless, the concerns with security which were identified were not all related to capital structure per se, implying an even broader set of objectives than was suggested by Gordon. The works of Zeleny and Spronk placed considerable emphasis on multiple goals and multiple criteria. The evidence provided by this study is strongly supportive of this emphasis, although both goals and criteria were frequently implicit. Whether the use of interactive multiple goal programming, suggested by Spronk, is appropriate, is far less clear. No evidence was found of the actual use of such an approach. Indeed, the evidence on the complexity of decision making in a volatile environment suggests that the information requirements of such an approach are too great for it to be practical. Nevertheless, greater emphasis on modelling would probably enable more criteria to be formally incorporated into the decision making process. Zeleny also discussed the concepts of *"bounded rationality"* and *"bounded optimality"*. No direct assessment of these was undertaken. Nevertheless, the findings on philosophies and strategies, discussed in more detail below, suggest that some kind of parameters or bounds do frequently exist, providing a framework within which decisions can be made. The views of Schmidt, on the need to recognise flexibility of objectives, were also found to have some measure of support in this study, principally in terms of certain companies being forced to take a short run approach to problems, with

associated short run objectives such as survival. However, too much should not be made of this. In many cases, while multiple objectives were found, a fairly high degree of continuity of such objectives appeared to exist over time. Indeed, while the ideas of Schmidt have much in common with the findings of this study, they appear to be more important in the area of philosophies and strategies than in the area of objectives.

Chapter 3 identified a number of criticisms of finance made by Donaldson (1963: 1969: 1985) and Hull (1982). This study provides implicit support for many of the ideas expressed by these writers on the differing goals of shareholders and managers. Particular differences supported by this study include: the desire (particularly strong in the smaller companies) to continue with the existing business and to expand if possible; concern with the company's total risk, and not merely systematic risk (exemplified by such things as the concern with diversification and acquisitions displayed by the category 1 companies); and the aversion to downside risk (which was displayed fairly consistently throughout the study). Donaldson also developed ideas on flexibility and financial mobility, based on managers desire for self-sufficiency. These ideas also have much in common with the findings of this particular study, and will be discussed in more detail in later sections.

Overall, it is clear that a single objective of share price maximisation does not provide a realistic base for a descriptive theory or model of investment and financing decisions in the shipping industry. This is not to deny the validity of such an objective for a normative theory based upon an assumed efficient market. Indeed, it is interesting to note that concerns with share price/shareholders, high quality earnings and regular dividends, were strongest in the category 1 companies. It may reasonably be inferred from this that such companies do give broad consideration to the logic of the financial markets, so as to ensure the maintenance of an appropriate relationship with these markets. Provided that the relationship is satisfactory, share price concerns will be small, and their operational significance will be low. In the final analysis, however, a reasonably efficient capital market will establish some kind of norm for the relationship between risk and return. The extent to which companies need to concern themselves with this will depend on the extent to which they need to go to the market for funds. However, even if little use is made of the financial markets a clear understanding of risk-return relationships should be useful in reaching decisions, since it provides a guide to the returns generally available for various categories of risk. This will be dealt with in more detail later, but the evidence of this study suggests a lack of awareness of alternative returns

available. The normative theory of finance has been developed from a financial markets perspective, and assumes economic rationality. While actual behaviour may depart from this, an understanding of the implications of the normative theory would appear to be a necessary element in an effective decision making process.

2.2 Philosophies and Strategies

The findings of this study included the identification of a number of philosophies and strategies which appear to be important ingredients of the overall investment decision making process. These are very similar in nature to the "ideologies" discussed by Brunsson (1982), referred to in Chapter 4. Little attention has been given to such ideas in either the literature on finance theory or that on corporate strategy, in spite of the fact that their importance in the overall approach to decision making appears to be considerable.

Brunsson perceived an ideology as some knowledge, perspective and/or attitude which persists over time, generally shared by individuals within an organisation. The summary on philosophies and strategies included in Chapter 11 makes it clear that companies surveyed did consistently adopt some kind of automatic or implicit filtering process in terms of project acceptability. For example, a philosophy of investing only in projects with potentially high quality earnings has meant that few category 1 companies have given any serious consideration to investments in the bulk markets. Indeed, these companies seem unlikely to give serious consideration to any investment which is not perceived as capable of giving some kind of competitive advantage which can be preserved or protected for several years ahead. Clearly in such companies certain types of activity were effectively eliminated on the basis of this broad philosophy. Further examples were found of other areas of activity which were effectively excluded from consideration, while in some cases investments were only considered if they were in specific areas, or had particular characteristics. It is clear, however, from the summary set out in Chapter 11, that while a number of philosophies and strategies were identified, significant differences existed between the three categories. These differences need to be recognised in any consideration of the actual process of decision making.

Overall the philosophies and strategies adopted by particular companies appeared to be applied consistently over quite long periods, with changes only occurring infrequently, usually as a result of

some fairly traumatic learning experience. This was particularly true of some of the category 2 companies, and a small number of the category 1 companies, notably where changes in their traditional markets had led to a dramatic decline in profitability. This is consistent with the arguments of Brunsson, that the dominant ideology is likely to be strong under normal conditions, and to be questioned only during crises. It implies that the analysis and identification of past and present perceived philosophies and strategies is likely to provide a very good guide to future philosophies and strategies, other than in times of crisis. Such an analysis effectively provides a clear set of parameters for future projects, and effectively limits the kind of projects which will be considered. Even if the development of philosophies and strategies is implicit, their importance in overall decision making is considerable. Finance theory, however, has virtually nothing to say on this area.

When considering the actual philosophies and strategies identified in this study several points of interest in relation to finance theory were identified. These related to the search for high quality earnings, diversification, flexibility, and the differences identified across the three categories.

Corporate managers in category 1 companies (and certain other companies) appeared to see diversification as an important part of maintaining high quality earnings and reducing corporate risk. This is inconsistent with a CAPM approach to finance theory, which suggests that diversification is best left to the investor, and provides empirical support for the views of writers such as Gordon (1981), Donaldson (1985) and Maddams (1982). Clear limits to diversification were found to exist, however, principally for reasons to do with managerial control, compatibility of the lines of business, business philosophy, and related issues.

The emphasis given to flexibility, by companies throughout the study, also poses problems for finance theory. Much of the theory of finance is based upon optimisation, or on achieving an appropriate risk/return trade-off. Typically even this trade off is seen as being the result of some kind of quantitative analysis. By comparison, companies in this study were much more concerned with managing risk in a broader and non-quantified way, with considerable emphasis being placed on the reduction or virtual elimination of downside risk, on keeping options open for as long as possible, and on developing a flexible approach to business, so as to be able to deal with problems as they arise. These findings are consistent with certain of the views expressed in chapter 3, dealing with criticisms of finance. For example, the work of Schmidt (1981) emphasised the importance of flexibility throughout the decision making process, while that of Derkinderen and Crum (1979) provided useful insights into

certain aspects, particularly those relating to financial strength and flexibility, and opportunities. Particularly interesting is the similarity in the findings of this study with those of Donaldson (1969), referred to in Chapter 3 (P 69/70). Donaldson argued that the challenge to management is provided by substantial unexpected changes which affect operations. For these to be successfully handled there must be an understanding of what is happening and how to adapt, time to act, and capacity to act. In developing the concept of financial mobility Donaldson was effectively concentrating on the last of these. This concept was seen as having a number of basic elements, some of which have much in common with the ideas on flexibility developed in this study. Perhaps the most important aspects of financial mobility identified by Donaldson were the preservation of funds flow equilibrium under various conditions; the identification of key policies for debt and dividends; and the identification of the resources which might be needed if an unexpected event arose. In the current study the importance of financial flexibility was also widely recognised and frequently achieved. Methods of achievement included such things as: adequate financial resources; lines of credit; good quality earnings and good cash flow; conservative debt levels; well financed assets; and relatively low dividends. The similarity of emphasis and approach is clear. In a sense, however, this study can be seen as extending the ideas of Donaldson by showing how the methods of achieving financial flexibility vary across the three categories of company depending upon the size, philosophy and nature of the activities of the companies. For example, Donaldson's ideas on funds flow equilibrium appear to be implemented by many category 3 companies by buying at the bottom of the market, borrowing conservatively, and ensuring adequate cash resources to survive a long period of recession. For category 1 companies a concentration on the achievement of high quality earnings was the preferred method. Such an option was not perceived as being open to many category 3 companies.

In establishing a strategy for financial mobility Donaldson also included a search process to identify hitherto unexpected events as soon as possible, and the development of strategies for dealing with unexpected events. This study suggests that companies regarded such an approach as unrealistic, given today's conditions of environmental complexity, and that a better approach was to develop strategies which are themselves flexible, so as to enable unanticipated events to be successfully dealt with. The concept of flexibility developed in this study, with its four constituent parts related to strategy, markets, operations and finance provides a somewhat broader approach than that of Donaldson. Approaches to financial flexibility are thus likely to be conditioned by the flexibility which

exists with regard to strategies, markets and operations.

In a later study (1985) Donaldson further emphasised ideas on financial self-sufficiency, with an emphasis on internal funding, and trade-offs being made between growth and risk. The findings of this study provide reinforcement for these ideas, especially for category 1 companies. Table 14 (P 251) shows that internal financing ratios for these companies were generally high. Table 5 (P 191) shows that dividends paid out typically represent a fairly low proportion of earnings (e.g. the average dividend payout ratio for 1981 was 34%). Donaldson also saw diversification as being consistent with the desire for self sufficiency. Interestingly, the highest dividend payout ratios for category 1 companies over the period 1978 -1982 were in two widely held companies with a major commitment to shipping, namely P & O and Ocean. Both have since diversified to a much greater extent, with substantial improvements in earnings quality being achieved, and a corresponding reduction in the dividend payout ratios.

Chapter 3 also contained a number of criticisms of finance theory which were based upon the perceived increases in environmental complexity. For example, Derkinderen and Crum (1981) called for *"greater consideration of environmental factors"* and pointed out that todays managers faced *"increased situational fluidity and a multitude of complexities"*. They particularly identified difficulties of obtaining reliable information and making cash flow projections as problems, together with the identification of the potential adverse effect on the firm of bad decisions. Bertoneche (1981) also identified a number of areas of increased complexity. Undoubtedly this study provides considerable support for these views, albeit in the context of one particular industry. Particular areas of increased complexity which were identified were: increased competition; governmental/political influences; and decreased predictability of future markets and associated cash flows. Problems such as these provide further impetus to the ideas of flexibility discussed above. Overall, this study suggests that greater consideration ought to be given in finance theory to ideas on flexibility, with the concept of risk being extended. While it may be argued that financial decisions should be the result of a careful balancing of the risk-return trade-off, such an approach excludes a number of the considerations of flexibility identified above.

One final comment is appropriate on the importance of the findings on philosophies and strategies for finance theory. While substantial differences were found across the three categories, considerable consistency of approach was identified within categories. Given the orientation of finance theory to the

security and financial markets, it might be argued that finance theory only relates to category 1 companies (the large public companies), plus a few category 2 companies (smaller public companies or large private companies). Little recognition appears to have been given in finance theory to the fairly fundamental differences in the approach and attitudes of the remaining companies.

2.3 Corporate Planning Systems and Strategy

The discussions in this area indicated that detailed planning systems were common in the category 1 companies and some of the category 2 companies. For such companies the decision making process was long and complex, with a variety of factors being necessary parts of the process. Regular re-evaluation of plans appeared to be a necessary part of most systems. The precise weighting given to each part of the analysis was not clear, nor was the exact time at which decisions were effectively made. However, the weighting given, in finance theory, to the calculation of an appropriate NPV or IRR, does not appear to be reflected in fact.

For the remaining category 2 and category 3 companies planning systems were generally much less detailed, sometimes non-existent. However, even in the absence of planning systems a certain amount of economic and market analysis was typically undertaken, and this was generally an important part of the overall decision process. In practice this analysis was the first part of the project analysis, and tended to merge with ideas of the next section.

These findings are also consistent with many of the criticisms of finance theory made in Chapter 3. For example, both King (1975) and Pinches (1982) saw capital budgeting theory as representing only a relatively small part of the decision making process. Various other criticisms of finance theory were identified in Chapter 3 (section 3.5) relating to the need for closer links with corporate strategy. There is little doubt that many of these criticisms are valid in the context of the shipping industry. Given the importance of this particular area, section 3 of this chapter deals specifically with links between finance and strategy. At this stage it is perhaps sufficient to note that the decision making processes found in practice were longer and more involved than those implied by finance theory. As such the theory of finance does not provide an appropriate or adequate base for understanding how the decision making process actually functions.

2.4 Project Analysis

In the findings on project analysis, several ideas stand out as having most significance for finance theory.

(i) The use of discounting techniques or other appraisal techniques was seen as being unlikely to assist in the identification of projects which were consistent with the chosen philosophy or strategy (e.g. the search by category 1 companies for high quality earnings over time). This is not to deny their role in the evaluation process, but this role represents only a small part of the process.

(ii) The emphasis on "project analysis" found in the literature was generally misleading. "Projects" ranged from whole lines of business, fleet concepts, membership of consortia, single ships, or combinations of these. The first three were found to be particularly important for category 1 companies. Larger projects such as these seemed generally to be likely to involve decisions being made on rather imprecise or uncertain quantitative information, with the result that non-quantifiable factors were given much greater weight than might have been expected. The strategic implications of projects such as these were usually paramount. The fact that projects were frequently analysed as part of a system, which was in turn seen as part of a diversified range of activities, provides support for Derkinderen and Crum (1981), in their argument (see P 60) that projects in a portfolio are not economically independent in the way that securities in a portfolio are, and that the traditional approach to securities is not necessarily valid for the corporate resource allocation decision.

(iii) The use of the traditional techniques was low, particularly outside of the category 1 companies. Undoubtedly some of this was due to a misunderstanding of the techniques themselves, with a surprisingly large number of examples being found of confused and inappropriate use of discounting techniques. However, the main reason for the relative lack of importance appeared to be the difficulty of forecasting with any degree of confidence. It might have been expected that the careful use of statistical techniques, and other techniques such as sensitivity analysis, would make the traditional techniques more useful. In fact, as has already been shown, little use was made of quantitative techniques for dealing with risk. Sensitivity analysis was used to identify critical points and problem areas, but it was also found to be a way of avoiding specific forecasts. In many cases forecasting was so difficult that the emphasis was placed on the identification of critical points (e.g. break-even freight rates), with judgements then being made on the likelihood of such events occurring. On balance it would appear that the traditional appraisal techniques are viewed as being of relatively little use in dealing

with projects or industries with forecasting difficulties. In such cases their role is likely to be small. This is consistent with the findings of Bertoneche (1981), referred to in Chapter 3.

(iv) Where discounting techniques were used, the internal rate of return (IRR) was generally found to be more popular than NPV. This is consistent with the findings of Petty and Scott (1981) (see page 75). It should be noted, however, that in a large proportion of cases where discounting techniques were used, both approaches were used. Table 29 (P 362) shows that of the 17 companies using NPV, 14 also used IRR, with a further 9 companies using IRR as their only discounting approach. The precise reasons for the preference for IRR were not clear, but the fact that it does not require the identification of a particular rate of discount was undoubtedly important. The considerable confusion which was found to exist with regard to the choice of discount rate would appear to support this reasoning. It is, of course, recognised that whichever method is used, a choice of hurdle rate nonetheless needs to be made. However, where uncertainty about the rate exists, the use of IRR is easier than the use of NPV, since a single calculation can be made, followed by a judgement on the acceptability of the return calculated. While the use of alternative discount rates in an NPV calculation should lead to the same kind of understanding of the implications of the project flows, the fact remains that such calculations are a little more involved. This does not in any sense reduce the theoretical superiority of the NPV method, but it does help provide some explanation as to practical reasons for the preference given to IRR. A second reason may be related to the fact that profitability objectives for category 1 companies (the largest user of discounting techniques) were often couched in terms of return on capital targets. Where this occurs the calculation of an IRR may well be perceived as a more appropriate way of presenting project returns than NPV. It is also worth noting that the circumstances in which NPV is clearly theoretically superior to IRR, namely, where mutually exclusive projects are being considered, where cash flows are non-conventional, or where capital rationing exists, do not appear to be likely to pose major problems for the shipping industry. Expected cash flows are unlikely to be non-conventional. The attitude of banks and other suppliers of finance is such that rationing is likely to be self-imposed, rather than market imposed. The problem of mutually exclusive projects remains, though the range of alternative is likely to be low, with the consequent effect that potential problems with the use of the IRR are likely to be recognised. The assessment of the impact of project flows on corporate figures, while not being theoretically as efficient as the use of NPV, seems likely to eliminate most of the potential problems of mutually exclusive projects.

(v) A frequently found consideration in decisions to do with investments, was the impact of individual projects on corporate figures, especially those relating to debt service and liquidity. In many cases the effect on overall results was a more important factor in decision making than individual project figures. More recognition of this could be made within finance theory.

In considering the role and importance of the traditional appraisal methods a number of other factors need to be borne in mind. The first of these is that clear evidence could be found of considerable misunderstanding and confusion over the correct use of the techniques themselves. As has already been pointed out, the choice of discount rate posed particular problems, since the type of cash flows included in the calculation has a significant bearing on the rate which is appropriate. Traditional finance theory suggests that financing flows should be excluded, with an assumption of 100% equity funding being made. Using such flows, an appropriate discount rate is argued to be the weighted average cost of capital. Even this is only correct if new projects are in the same risk category as existing projects, and are funded broadly in line with current capital structure proportions. In fact only a minority of companies in this study (9 of the 26 using discounting techniques) excluded financing flows from their calculations. (See Table 31 Page 363). All but one of these was in category 1. Only five used weighted average cost of capital as the basis of the discount rate. Four used discount rates based in some way on the cost of borrowing. In two of these cases a substantial risk premium was added to give a rate more appropriate to the risk inherent in the business. In the other two cases the discount rate reflected the cost of borrowing. Such a practice is contrary to the theory of finance, and clearly gives no extra return to equity holders for their risk capital on new projects. More disconcerting than this however, is the fact that a total of 15 of the 26 companies using discounting techniques based their calculations solely on cash flows including financing flows. This is not wrong per se. However, it needs to be recognised that calculations of this sort should be based upon an appropriate return to equity, not on the weighted average cost of capital, or the cost of borrowing. This seldom happened. Of the category 1 companies, two used rates very close to the borrowing rate. Two used the borrowing rate adjusted by a risk premium, but did not specifically identify these as attempts to calculate an appropriate return in equity. One used a figure of 20%, on the basis that this *"seemed about right"*. One used a variety of rates, depending upon circumstances. Two did not specify the rate used. For category 2 and 3 companies the answers received were even more confused, with the following bases being used:

(i) the cost of borrowing (3 companies);

- (ii) the cost of borrowing adjusted by a risk premium (2 companies);
- (iii) the return needed to achieve a real return of 3 - 4% (1 company);
- (iv) specific rates - one company stated that rates were variable, but 16% was typical. One used 25% as an appropriate return on equity.

Given that virtually all category 2 and 3 companies used cash flows including financing flows, it is clear that the potential for misuse of the discounting techniques is considerable.

Several possible implications might be drawn from these conclusions. The first is that if the correct procedures were important to business survival they would have been identified as such and be in use. Misunderstandings of the type referred to above therefore could be taken as further evidence of the low weight given to discounting, and their relative unimportance in the identification of effective strategies. A second implication is that evaluation errors are occurring and that the theory in this area needs to be re-emphasised. The likely position seems to be somewhere between the two. The overriding importance attached to strategies which are seen as giving both some kind of competitive advantage and a degree of flexibility has already been noted. The role of evaluation techniques is low. However, problems can, and probably have, arisen in the industry which may be related to the misuse of evaluation techniques, which in turn may impact on the success of the strategies chosen.

A particular concern in this area relates to the raising of further equity finance. Overall it is clear that very few companies were making serious attempts to evaluate such things as the appropriate rate of return on equity for a venture in a risky line of activity such as bulk shipping, funded say 80% by debt. The use of CAPM, or something similar, to make estimates of a reasonable return, would provide useful insights into the kind of returns needed to ensure continued funding from the financial markets. The perceived shortage of equity capital in the shipping industry may well be the result of completely inappropriate returns being available on equity capital in shipping. Certainly the evidence that was collected suggested that very few companies appreciated the implications of the theory of finance in this area. In many cases required rates of return were too low to continue to obtain equity capital from an efficient capital market. This may well result in increased reliance on debt finance and consequent increases in the risk of bankruptcy. It would thus appear that useful insights can be obtained by the correct use of the evaluation and related techniques. One such example is the concept of Adjusted Net Present Value, discussed on page 51, which offers potential advantages for international projects funded with subsidised loans. No use was found anywhere in this study of this technique. Some

re-emphasis of the theory in these areas would appear useful.

A second factor of note in considering the role and importance of traditional appraisal methods is that none of the additional methods of appraisal need be seen as being mutually exclusive with the traditional methods. These latter methods have not been invalidated. They have simply been put in context, as one part of a broader appraisal. They have a role in many companies, but its precise nature depends upon the type of company, the nature of its activities, and the current position of the company and economy. The *"broader context"* sought by writers such as Derkinderen and Crum (1981), and the recognition of the need for a multi-stage, multi-criteria, approach to investment and financing decisions, appear to be essential stages in the development of a more practically useful theory of finance.

A third factor of undoubted importance relates to the question of environmental complexity. Various criticisms of finance theory were identified in Chapter 3 (P 56/59) which relate specifically to the difficulties caused by complexity and increased environmental turbulence. Overall, there is little doubt that the dramatically increased complexity and volatility of the shipping industry has changed the emphasis of the investment decision making process, both in terms of the approach to planning systems (or the collection of economic and market data), and the appraisal methods used. For example, relatively little emphasis was now given to the forecasting of project figures. Where such forecasts were made (i.e. the category 1 companies) they were frequently used in conjunction with techniques such as sensitivity analysis, so as to build up a better overall picture of the implications of different outcomes in an uncertain world. Rather more emphasis was given to consideration of current and potential market and environmental factors, to cost/revenue relationships and likely changes therein, and to the identification of areas of flexibility associated with particular strategies or investments. The work of the writers identified in Section 3.3 of Chapter 3 appears to be generally supported by the findings of this study, although variations arose due to the peculiarities of the shipping industry, and within companies.

Finally, it is worth re-considering the approaches and attitudes of banks and other lenders, identified in Chapter 6, and their implications for project analysis. The point was made in that chapter that few banks required detailed forecasts, and that where these were required they tended to cover costs over the relatively short term. Expectations with regard to both revenue forecasts and the use of formal appraisal techniques was low. The emphasis was placed on track record, an analysis of the

underlying project assumptions, debt service ability, and security. Any company which wishes to obtain debt funding for a project will need to give careful consideration to these aspects. Given the importance of debt finance to the shipping industry these aspects are thus likely to impact on a company's internal project appraisal, with a possible consequent playing down of the traditional techniques. This in turn helps to explain the concern found within companies with downside risk, since poor results may be viewed as a "black mark" on a track record, and with the impact of a project on corporate results, which may affect perceptions of both debt service ability and security.

2.5 Risk

This study provides a number of interesting insights into the analysis of risk by decision makers, which have implications for the theory of finance. Some of these have already been introduced. Probably the single most important factor, already identified under philosophies and strategies, relates to the ideas on flexibility. Virtually all of the category 1 companies actively sought a diversified range of activities, to maintain high quality earnings and to preserve strategic flexibility. Finance theory suggests that shareholders should be left to carry out their own diversification, through the holding of a portfolio of securities. The theory of finance in this area must therefore be seen as normative, rather than positive, providing little guidance to actual behaviour within companies.

The ideas on flexibility were seen to pervade the actions of all companies at some stage. While few category 2 and 3 companies were able to engage in substantial diversification of the type found in category 1 companies, considerable emphasis was nevertheless placed on market or operational flexibility. Such an approach, as with that of category 1 companies, suggests an overriding concern with risk at the overall corporate level. Finance theory says little about this, other than in the area of capital structure, but rather more about risk associated with individual projects. In passing, it should be noted that the behaviour of some category 2 companies, and most category 3 companies, in this study, provides some measure of support for the ideas of Norman (1981)(see page 81), on the possibility of risk reduction through optimal policies on chartering and sale and purchase of vessels.

A particular facet of the flexibility approach which was consistently found within the study, were concerns with regard to financial strength and flexibility. While the emphasis was rather different across the three categories, the careful preservation of an adequate financial base, in terms of liquid funds or access to them, and the analysis of the potential impact of projects on the corporate

financial position, were generally important parts of the appraisal process. Finance theory tends to focus on questions of capital structure, with the final structure being the result of a balancing process between the advantages of debt and considerations of financial distress and bankruptcy. However, in this study rather more factors appeared to be important in achieving a strong and flexible financial position, with capital structure being essentially a residual. Certainly no cases were found in which estimates of bankruptcy costs were made. If projects were seen to have any real potential for bankruptcy, they were generally rejected.

Another interesting factor which was found in this study was the relative unimportance and lack of use of the various techniques for dealing with project risk. The implication of this study is fairly clear, namely that corporate risk is more important than individual project assessment. The rationale for this appeared to be that companies were prepared to carry a certain degree of risk in relation to individual projects, even if this was not clearly assessed, provided that the overall level of corporate risk was acceptable. Nevertheless, consideration of corporate risk need not exclude consideration of project risk. The two are not mutually exclusive, and there seems little doubt that greater use could reasonably be made of the existing techniques. Practice could no doubt be improved by further study of the theory in this area. Having said this, some note needs to be taken of the real problems of forecasting in this particular industry, and the considerable use made of sensitivity analysis. Many of the traditional approaches require some assessment of probability distributions for project flows. Very few managers actually did anything like this, and few had any real confidence in the forecasts which were prepared. The use of sensitivity analysis, especially when related to corporate financial models, enabled a profile of risk to be built up, without committing managers to individual forecasts. While, at the end of the day, judgements still needed to be made about the critical points identified, managers were not in the position of having to defend particular forecasts. Clearly the behavioural implications of the various techniques are not identical. Further consideration of this aspect should prove interesting. The findings of this study with regard to the use of sensitivity analysis, and the relative lack of use of other techniques for dealing with project risk are broadly similar to the findings of Pike (1982)(P78).

2.6 Financing and Capital Structure

This study provides empirical evidence on a number of aspects of the theory of finance relating

to financing and capital structure. The first concerns the separation of the investment and financing decisions. As has already been indicated in Chapter 11 on the Summary of Findings (Section 2.7) considerable concerns existed with regard to financing, most especially for the smaller companies of category 2 and 3, but even for category 1 companies. The four concerns which were identified in Section 2.7 of Chapter 11 suggest very strongly that the separation of the two aspects of the decision is not realistic, certainly in the context of the shipping industry.

The second area deserving further comment is that of capital structure. The theory on this area is itself somewhat confusing, with traditional theories being contrasted with those of Modigliani and Miller, which in turn have been modified to include potential bankruptcy costs. Both the traditional theory, and that of Modigliani and Miller when modified to incorporate taxes and potential bankruptcy costs, imply that an optimal capital structure can exist. Very little empirical testing has occurred in recent years. In fact empirical testing of the theory cannot be achieved by asking decision makers within firms for their views on capital structure. It is the market collectively which determines whether such a structure exists. Nevertheless, this study does provide some useful insights into the theory, since it includes the views of bankers, and those of managers, on the importance of capital structure and the extent to which it is an internal decision variable.

In fact, the study is quite clear in this area. Very few companies considered the impact of capital structure on share price, other than in the most general terms. Virtually no company had any clear target debt/equity ratio. However, a substantial number of companies, particularly in categories 1 and 3, did have limits to the amount of debt they would wish to take up, and concerns with debt levels undoubtedly existed. Those concerns were not generally with capital structure per se, but to do with financial prudence and flexibility. The capital structure in existence at any particular time appeared to be the result of a balancing of a variety of factors, the most important of which were outlined in section 2.7 of chapter 11, as follows:

- (i) the perceived effect of capital structure on share price.
- (ii) the relationship between investment opportunities and availability of internal funds.
- (iii) the perceived effect of capital structure on bond ratings
- (iv) the relationship between profitability and debt service.
- (v) the nature of the assets being funded.
- (vi) market fashion and changing economic conditions.

As can be seen from that section, some differences were found in the behaviour across the categories, but considerable consistency of approach was nevertheless found. Particularly important influences were the rate and quality of earnings, the relationship between these earnings and debt service commitments, the ability to finance new ventures internally, and economic conditions. For category 1 companies, bond ratings and, to a much more limited extent, share price considerations, also provided a broad backcloth to decisions. For some category 2 companies commitment to the industry inevitably led to substantial borrowings to support new investment, since no alternative existed. For category 3 companies, conservative debt ratios were frequently the result of an overriding concern with the ability to service debt over periods of adverse trading.

These findings have much in common with the work of Gandemo (1981), referred to in Chapter 3 (P 57/58). Gandemo was concerned with the influence of increased environmental turbulence on corporate investment and financial planning. The choice of an optimal capital structure was seen as a particularly difficult problem when conditions are changing. Gandemo felt that existing theories did not include all the relevant variables, and identified other potentially significant variables, including the risk of being taken over, the risk of being unable to cover fixed financial obligations, and the potential impact of a long period of recession. While not being of uniform importance across the three categories of company, these variables were nonetheless frequently found ingredients of the decision making process.

Some similarities exist between the findings of this study and Myers (1984) ideas on a *"modified pecking order"* approach to capital structure, described on page 50. This approach implies that a reluctance to issue new equity exists. New investments will be funded firstly from internal funds, then from debt. Dividend payout ratios are likely to be low, thus facilitating the financing from internal funds of a *"normal"* amount of new investment. Remaining investment will probably be funded from debt, rather than new equity. As investment opportunities and profitability fluctuate so the debt equity ratio changes. In this study dividend payout ratios were generally low. For category 1 companies earnings quality was high, thus assuring a substantial internal funding capability. Even so, examples can be found (see Table 11- page 248) of a number of instances where the use of debt to fund new investment resulted in sizeable changes (5% or more) in debt-equity ratios from one year to another. For category 2 companies, with much lower quality earnings, rather larger

differences in debt-equity ratios from one year to another were identified. Both of these provide support to the pecking order approach. As it stands, however, the pecking order approach tends to play down, if not ignore altogether, the importance of the preservation of a reasonably strong financial position. It implies that all profitable new ventures will be funded. This study suggests that the preservation of a flexible and strong financial position will be an important factor in determining the level of new investment actually undertaken. For category 1 companies high quality earnings generally mean that such a position can be easily maintained, and most profitable investments can proceed. For category 2 companies the desire to stay in the business may well conflict with the achievement of a good financial position, and some compromise may need to be worked out. Certainly for category 3 companies financial prudence was generally likely to mean that some investment opportunities may need to be foregone.

In passing, it is worth noting that companies in this study almost invariably included lease commitments as part of the overall debt service commitments, when considering their attitude towards debt levels. A similar view was expressed by virtually all of the banks in assessing requests for finance. The question of whether lease financing can be seen as off balance sheet financing, and a way of increasing debt capacity, would thus seem to be relatively unimportant. Any increase in debt capacity associated with leasing was almost certainly due to the fact that lease periods may be longer than loan periods, and debt service therefore somewhat easier, and not to the fact that it is off balance sheet financing. A further point worth emphasising is that debt was effectively limited by the security which could be offered to lenders. For many firms, and certainly most of the category 2 and 3 companies, this meant that levels of debt were effectively limited by the current market value of its assets. Indeed, where debt/equity ratios were referred to in category 2 and 3 companies, the rate was usually based on current market values.

As has already been pointed out, the fact that decision makers do not have target capital structures in mind does not invalidate the idea of optimal capital structures in a market sense. It has clear implications for the usefulness of the theory in a positive sense, but it may nevertheless be true that optimal capital structures do exist. However, the fact remains that for category 1 companies, weighted average cost of capital was used in only 5 of the 16 companies which utilised discounting techniques. Even in these cases it needs to be recognised that the use of such a figure can only be theoretically correct if the risk of the new venture is the same as that currently being faced, and if the

new venture is to be financed in the same proportions as existing business. Furthermore, it will only lead to an optimal result if capital structure is at an optimal position.

In the course of this study a certain amount of evidence was collected with regard to changes in the cost of debt or equity as levels of gearing change. As has been made clear earlier, most finance for new vessels came from either yard credit or the banks. Most of the borrowed funds for second hand vessels came from the banks. Yet terms for yard credit followed a very standard pattern, with 60-80% of the cost of new vessels generally being available at quite low interest rates (frequently 8 1/2%), over periods of 7-12 years. Security was typically related to the individual asset being purchased. Very little difference appeared to exist in the conditions for category 1, 2 or 3 companies. As far as bank credit is concerned, the point has already been made in chapter 6, that the banks generally considered their spreads to be narrow. Competitive pressures were such that interest charges could not be raised very much, even if the perceived risk associated with a loan was significantly higher than normal. Certainly no evidence was found of any formal attempts to relate the size of spread to the amount of risk involved. In general, the banks appeared to take the view that they were only interested in certain kinds of business, and would simply not lend if the risks became too high. The dearth of equity finance from the banks is supportive of this view. Where leasing was used, and this was only effectively available to a restricted number of companies, no evidence was found of the interest portion of the cost being any more expensive than borrowing, even with 100% finance being available.

The implications of this for the debate on optimal capital structures would appear to be that the cost of debt changes very little as the debt/equity ratio rises, but a point is eventually reached at which debt becomes extremely difficult to raise, almost irrespective of price. This cut-off point is likely to be somewhat below a debt/equity ratio (using $\text{debt}/(\text{debt} + \text{equity})$) of 70%-80% since the security covenants are likely to come into play at this point. Certain banks adopt rather more conservative attitudes to overall debt levels than this, implying that the above figure should be seen as a maximum figure. Clearly a small number of companies have higher debt/equity ratios. Detailed evidence on bank attitudes to these companies was not collected, and probably would not have been made available anyway. It would seem reasonable, however, to hypothesize that such companies experience much greater day to day pressure from the banks, and only obtain additional funds if there is a reasonable chance that such funds could be used to retrieve the current difficult situation.

With regard to estimates of the cost of equity, considerable confusion was found within companies as to the appropriate discount rate to use, and these have been detailed earlier (Section 2.4). As has already been pointed out, a substantial number of cases were found in which returns were calculated on the equity portion of new ventures, but then related (in terms of adequacy) to the cost of borrowing. Even where the nature of the return was correctly recognised, little evidence was found of significant changes in the returns required for different debt/equity levels, at least within categories. Overall, there was very little evidence of a real understanding of the implications of CAPM for the cost of equity.

Several limitations need to be recognised with regard to these comments on the cost of equity. Firstly, it must be remembered that questions were asked of decision makers within companies, and decision makers were not necessarily owners or shareholders, actually putting up finance. Secondly, most of the category 1 companies, as was shown in Table 11 (P248) had, in recent years, gearing positions which were broadly consistent over time, even though substantial differences existed between companies within the category. In reality, therefore, even if the actual costs of debt and equity were capable of being plotted for an individual company, at different gearing levels, a very limited graph would result. Thirdly, for many category 2 and 3 companies, no estimates of cost of equity could be made, since such funds were not raised on the financial markets anyway, but reflected the particular views, interests and aspirations of the owners. Required rates of return for such owners were in many cases merely one part of an overall set of objectives, and were not subject to market forces in quite the same way as the large public companies of category 1. Having said this, it was quite clear from the discussions that many such owners did not appreciate the implications of CAPM, to the extent that they frequently appeared to accept, and expect, returns, often from highly geared ventures, which were considerably lower than those which would be required from a category 1 company. The implication of this is interesting, if apparently illogical, namely that certain individuals will provide funds for a private business which yields lower returns than those obtainable from a public company in a comparable, or lower, risk category. For this to be the case, factors other than economic ones must be given a weighting not normally associated with the security markets.

Clearly no formal assessment of market views of capital structures is possible on the basis of the above evidence. Nor was this the aim of this study. What is clear is that the search for an optimal capital structure is not a major part of the internal analysis of investment and financing decisions by

companies in this study. However, the evidence collected suggests that the cost of debt will not rise significantly as gearing rises. Nor was any evidence found to suggest that substantial increases in required equity returns would occur automatically as gearing increases, though little detailed information was obtained on companies with high gearing levels. This suggests some advantages to the use of debt. However companies limited debt for reasons of financial prudence and flexibility, irrespective of any financial market views.

2.7 Conclusions on Finance Theory

The findings of this study suggest that relatively little overlap exists between finance theory and actual behaviour within organisations, and that finance theory does not adequately reflect the complexity of the internal investment and financing decision making process. The practical difficulties of implementing the theory are also significant. A more complex theory or model is needed if these complexities and practical difficulties are to be effectively encapsulated.

This is not to say that the theory has no relevance with regard to securities and the financial markets. No evidence was collected on this particular aspect, but the evidence on market efficiency collected in past research is generally supportive of much of the theory, particularly that relating to risk/return trade offs and portfolio theory. Interestingly, even in this area increasing doubts have been raised (see P 46/7). The evidence collected in this particular study suggests that a certain amount of confusion exists with regard to this part of the theory, and that the market relationship between risk and return is not always recognised, and certainly not translated into equivalent rates of return for internal purposes. Even if an alternative descriptive theory or model of internal investment decision making is devised, managers must be aware of the market implications of their actions. This will almost certainly require the recognition and inclusion of parts of the existing theory within any internal processes.

3. The Links between Corporate Strategy and Finance

3.1 An overview of the findings on corporate planning and strategy

While it is not the aim of this thesis to provide a detailed assessment of the theories relating to corporate planning and strategy, or of the supporting techniques, this study does permit a number of broad observations to be made on corporate planning and strategy in the shipping industry, which help achieve the project aims in this area, namely the identification of areas of overlap and linkage between finance and strategy, in the consideration of investment and financing decisions.

Perhaps the most significant point is the fact that for category 1 companies corporate planning systems were found to be well developed. If the four stage evolution model of Gluck, Kaufman and Walleck (see P 87) is taken as the base, it is clear that most category 1 companies are on either phase 3 or phase 4. Planning was undoubtedly well beyond the phase of basic financial planning, or even forecast based planning. The problems of forecasting which were identified by Gluck et al were undoubtedly found to exist in the shipping industry. Phase III, externally oriented planning, suggests the need for planning to respond to external market pressures. The ideas of strategic positioning, particularly with regard to diversification, together with the careful elimination of certain unfavourable areas of activity, were very much in line with this phase. Phase IV, "strategic management", attempts to go further than this, by emphasising the importance of a corporate values system and a planning process that stimulates entrepreneurial thinking. The findings of this study do not provide clear evidence that such systems were in operation. Nevertheless, a great deal of similarity was found between practice and the ideas described by Ansoff as *"entrepreneurial planning"*, which in turn appears to be broadly similar in concept to strategic management. Particular features found in category 1 companies included the following:

- (i) the taking of a broader perspective on the environment. The range of background information obtained, normally as part of the planning process, has already been discussed. In most cases a substantial amount of background information was seen as being available as a matter of routine, being absorbed and used as appropriate in reaching decisions;
- (ii) the identification of areas with potential problems, notably in terms of supply/demand relationships and the level and quality of earnings;

(iii) the continuous search for new opportunities, so as to ensure a steady flow of areas of business with the potential for high quality earnings;

(iv) the importance attached to maintaining a position which was both strong and flexible, in terms of strategies, markets, operations and finance. The importance of positioning and flexibility for the choice of strategies was considerable. Indeed, it could be seen as the factor from which most systems and strategies followed. The development of flexible strategies requires a different approach to that implied by finance theory, with its emphasis on optimisation. Some of the implications of this were discussed in the preceding section. Further discussion will be found later in this section.

In passing it is perhaps worth noting that the emphasis on flexibility found in this study is consistent with many of the ideas of futures research which were identified in section 3.7 of Chapter 4. Particularly important was the use of sensitivity analysis. As used, sensitivity analysis seemed to be closely related to scenario planning. These techniques were generally seen as being more appropriate than detailed forecasting when markets are volatile, and as a means of identifying potential problem areas early.

For category 2 and 3 companies the evidence is less clear. Relatively few such companies prepared detailed forecasts, environmental analysis was much less detailed, and the analysis of expected financial performance tended to concentrate on liquidity and (to a more limited extent) long term profitability. Phase I and phase II of the corporate planning evolution appeared to be largely omitted. However, considerable emphasis was given to the preservation of flexibility, the holding of adequate financial resources to see a company through adverse events, and to an opportunistic approach to the markets. In some senses this latter philosophy has much in common with that implied by strategic management. This apparent inconsistency is probably partly attributable to the differences in the type of business carried out by companies in the various categories. Further research into the differences in approach between large and small firms with regard to planning and strategy would seem useful.

Of the literature which relates specifically to shipping, the MARAD study (1982)(see page 124) is perhaps the most developed. The MARAD study is limited to the US liner trades, and differences have already been established to exist in the decision making processes appropriate to the various trades. Nevertheless, considerable similarity was found to exist between the approach suggested in the MARAD study, and the behaviour patterns identified in certain companies in this particular study. The most

important areas of similarity between the two studies are as follows:

- (i) Both emphasise pursuing opportunities and avoiding threats.
- (ii) Both emphasise the preservation of flexibility, so as to be able to deal with the unforeseen.
- (iii) The environmental analysis suggested in the MARAD study, covering industry, company, markets, competition, and other environmental factors, has much in common with the approach used within the liner trades in this study.
- (iv) The evaluation process suggested in the MARAD study has some similarities with the finding of this study, but a number of differences were also found. The MARAD study suggests the use of computer simulations as a means of evaluation, with concentration on income statements, cash flow statements, utilisation tables, and market share tables. Both IRR and the impact of project flows on corporate figures are regarded as important. These techniques were not universally found in the liner companies, but a high degree of usage was nevertheless found in the larger companies.

Overall, the approach suggested in the MARAD study appears to be rather more reliant on forecasts and formal analytical techniques than the approach found in practice. It accords more closely with the current theoretical models than do actual behaviour patterns. Nonetheless, it is clear that many of the ideas included are actually followed by large liner companies.

Very little evidence was found in this study of the use of the specific techniques identified in Chapter 4 as being supportive of corporate planning and strategy. Some of this may be due to the fact that, given the financial emphasis of this thesis, questioning in this area was fairly general, whereas that relating to the use of financial techniques was specific. Some may be due to the fact that in the early interviews the questioning on strategy was less rigorous, developing as the study progressed. A further problem is that some of the techniques, e.g. business portfolio matrices, seem more likely to be of use in the Head Office of a diversified company, rather than in its shipping subsidiary, but interviews were often held in the latter, since the emphasis was on shipping. What was clear, however, is that in many cases, particularly category 1 companies, the analysis which was carried out had many similarities with the ideas underlying particular techniques, even if the techniques themselves were not specifically identified. For example, the processes carried out by most category 1 companies involved in the liner trades typically included considerations of market share, competitive position (including a detailed competitor analysis), and a variety of economic analyses aimed at identifying future prospects and problems. Reference has already been made to the concept of distinctive competence (see P 94),

and to the identification of potential areas of business which appear likely to encounter difficulties. The overlap between these ideas and supporting techniques such as SWOT analysis and business portfolio matrices is clear. Yet few companies specifically identified the use of SWOT analysis, and none identified the use of any specific business portfolio matrix. Overall, the analyses actually undertaken by the category 1 companies support the same kind of thinking about strategy as is implicit in these techniques, without resorting to the somewhat simplistic approach implied by the techniques themselves. By way of example, the identification of the bulk markets, and particularly the tanker markets, as potential problem areas and hence as areas for divestment, appears similar in essence to the identification of *"dogs"* by the use of the share-growth matrix. Reasons given for such decisions were generally related to the inability to obtain any kind of competitive advantage in these areas, which was in turn partly due to low market share, low growth prospects, and low prospects of profitability. For companies in category 2 and 3 the none-use of portfolio matrices may well be due simply to the fact that few such companies could afford any significant diversification.

Closely linked to ideas on portfolio matrices and SWOT analysis is the idea of the experience curve. In this study the dangers of applying the experience curve to the shipping industry could be seen. In particular, it is clear that the search for increased market shares in the liner industry has led to a situation of overcapacity and decreased profitability, which has impacted on most liner companies. Other problems with applying the experience curve to the shipping industry relate to the use of conferences and consortia, subsidies and low cost inputs (e.g. flag of convenience ships), and the inability to obtain significant economies of scale beyond a certain point.

Chapter 4 referred to the development of ideas related to contingency theory. This study provides evidence of the need to recognise that in developing appropriate systems and strategies, due consideration needs to be given to the overall characteristics of the company concerned, its markets, and its environment. This is not to say that strategy is entirely dependent upon environment. Firms may be pro-active, rather than reactive. However, it is important in considering the strategic options open to say, a category 3 company, to recognise the serious constraints under which such a company operates. These constraints are in turn likely to lead to somewhat different approaches to planning and investment decision making, and to involvement in different areas of business, to those found in other categories. In devising a descriptive theory or model of decision making these differences must be recognised.

This sub-division of companies into categories facilitated the identification of analytical processes, philosophies and strategies used by companies in this study. Some similarities were noted with other empirical work on corporate planning and strategy, identified in section 5 of Chapter 4. For category 1 companies the processes carried out generally had the aim of providing a background against which strategic decisions could be made, so as to assist in the identification of activities which should be pursued, and of problem areas which should be eliminated. The collection of a broad set of environmental/economic data, and its detailed analysis, must, therefore, be seen as an important part of the decision making process of such companies. Activities to be developed require high quality earnings for some time ahead, which in turn requires strategies which give some kind of competitive edge which could be sustained for some time. The holding of an appropriate market share was undoubtedly regarded as an important aspect within the liner trades of category 1 companies. Another common strategy, again of significant importance in the liner trades, was the achievement of the lowest cost position in the particular trade or route concerned. The provision of high quality service was a further method used to obtain a competitive edge. In general, category 1 companies concentrated on the high technology, high cost end of the shipping markets, an approach similar in essence to the concept of *"distinctive competence"*, referred to earlier. In a complex and volatile world the search for strategies which would provide this competence needs to be conditioned by considerations of uncertainty and adaptability. The strategies developed must therefore permit the company to adapt to unexpected events as they arise.

For companies in categories 2 and 3 much less scope existed with regard to areas of activity and potential strategies. Planning systems were less developed but the aim was nonetheless the identification of appropriate areas of activity and associated strategies. Given an inability to compete effectively in certain markets, these companies were forced to concentrate on markets where the degree of distinctive competence which could be brought to bear was low. Under such circumstances the emphasis shifted to identifying markets where projected supply was insufficient to meet projected demand, or ships could be acquired at a price likely to give a capital cost advantage, with the possibility of future capital gains. As with category 1 companies, the ability to adapt and respond to the unexpected was an important consideration. A particularly important feature of this was financial strength and flexibility.

Overall, while differences of detail and emphasis were found, a considerable degree of overlap

appears to exist between the ideas and approaches underlying investment decisions which were identified in this study, and those set out in the first three sections of Chapter 4. The need to link these ideas with finance theory is clear, if a descriptive theory or model of investment decision making is to be developed.

3.2 Areas of linkage and overlap between corporate strategy and finance

In considering areas of linkage and overlap it is useful to consider the problem from both strategic and financial perspectives. Financial perspectives are provided by Chapter 11, section 2 of this chapter, which assesses the implications of this study for finance theory, and section 3.5 of Chapter 3, which identifies a range of criticisms of finance theory specifically relating to aspects of corporate strategy. Corporate strategy perspectives are provided by Chapter 11 and section 3.1 of this chapter.

Perhaps the most important of the financial perspectives provided by Chapter 11 and section 2 of this chapter are as follows:

- (i) Finance theory does not adequately reflect the complexity of the decision making process within companies. In general, a considerable amount of background information was collected and analysed, often as part of a formal corporate planning system. Its importance in the decision making process is considerable. By comparison, the use of the traditional financial evaluation techniques was low, and they were seen as offering little help in identifying strategies which give a competitive advantage.
- (ii) Finance theory largely ignores the role of philosophies and related strategies. In particular, the importance of positioning and flexibility does not appear to be adequately recognised. This is particularly important given the current complexity and volatility of the markets. The implications of this for risk assessment are considerable. In practice risk assessment was seen as part of the positioning/flexibility debate, and project risk analysis was given correspondingly lower weight.

The criticisms of finance theory relating to aspects of corporate strategy which were identified in section 3.5 of Chapter 3 offer similar perspectives. For example, Derkinderen and Crum (1981) pointed to the need for a systems approach, so as to conduct capital budgeting activities explicitly within the context of the corporate strategy. Coda and Dematte (1981) criticised the adequacy of the traditional financial concepts and techniques in their handling of strategic decisions. They argued that there is a multi-level decision system, with a different approach being used for the higher level

(strategic) decisions. Bertoneche (1981) pointed out that the underlying assumption of the traditional techniques is that the fundamental strategic decisions have been made. He suggested that more attention should be given to the integration of the traditional capital-budgeting framework into the overall resource allocation process. Crum and Derkinderen suggested (1981) (see P 66) five distinct classes of criteria, covering the various aspects of the decision process, namely: prescreening or filter variables; measures of aggregate performance over time; criteria that ensure corporate stability and harmony; strategic positioning in terms of maximising favourable options; and strategic positioning in terms of minimising the possibility of unfavourable outcomes.

While it was not the purpose of this study to test empirically any of these particular criticisms, it is worth noting in passing that this study nonetheless provides a great deal of support for ideas of this type. There is little doubt that in practice considerable attention was paid to the strategic aspects of decision making, often to the detriment of the traditional project appraisal techniques. The various criteria suggested by Crum and Derkinderen also have counterparts in the findings of Chapter 11. The prescreening variables could be related to the overall philosophies and strategies adopted by the various categories, eliminating many lines of business virtually automatically. A certain amount of use of the traditional measures of performance were found. Considerable emphasis was certainly placed on criteria related to corporate stability and security. The ideas of strategic positioning were found to be particularly important for category 1 companies, while general ideas on flexibility were found in other categories. Overall there is little doubt that the kind of criticisms made under this heading are relevant to the shipping industry. A blending of the traditional project analysis with ideas on corporate strategy is essential if an effective decision making process is to be developed.

The perspectives provided on corporate strategy have many similarities with those outlined above. Particularly important are:

- (i) the need to take a broader view of the environment, so as to ensure a clear understanding of current and potential markets, to provide a framework for decision making;
- (ii) the preservation of a strong and flexible position, with emphasis being placed on the search for new opportunities (especially in category 1 companies), and the identification of potential problem areas;
- (iii) the search for strategies with some kind of competitive advantage;
- (iv) the need to recognise that different analytical processes, philosophies and strategies exist for

different types of company.

None of these are inconsistent with the findings of this study, or the perspectives outlined earlier. Indeed, the extent of overlap of the differing perspectives is considerable. This suggests that a framework for decision making could be established which enables due consideration to be given to inputs from both strategy and finance. Given the findings of this study, with its recognition that the preservation of financial strength and flexibility is an important part of corporate strategy, it may be argued that finance and strategy are inextricably linked. In practice, however, it seems likely that strategy specialists will provide inputs relating to the identification of market opportunities, while finance specialists will concentrate more on financial strength and flexibility.

Section 2 of this chapter includes much related to the area of financial strength and flexibility. Further insights into the importance of this with regard to overall strategy can be provided by consideration of the approach referred to as PARE analysis, in the light of the findings of this study. PARE analysis, devised by Derkinderen and Crum (1979) (see P 119), aims to link together strategic management and finance. The main thrust of this approach is that the concepts of *"potential"* and *"resilience"* have more to offer in explaining investment and financing behaviour than those of *"return"* and *"risk"*. The resulting emphasis is on strategic positioning, rather than on a search for a single optimal position. The further sub-division of *"potential"* into *"opportunities"* and *"action range"* is consistent with the behaviour of many companies in this study, and represents a useful breakdown of the overall approach to investment. A positive search for opportunities was a feature of virtually all of the companies in this study. However, the actual following up of these opportunities depended upon the philosophy towards quality of earnings, and also on the overall ability to do so, in terms of financial ability, managerial or technical ability, market knowledge and expertise (including agency services), and the ability to acquire appropriate assets within a reasonable time. For example, clear evidence was found of the difficulties of breaking into the liner trades, which were very expensive, required a considerable infrastructure, needed a sophisticated agency network, and were frequently already organised under consortia or conference systems. Under such circumstances it is easy to see why relatively few category 2 and 3 companies were involved in such trades. By comparison, the problems of entering the bulk trades were small. In fact, the findings of this study suggest that category 1 companies are concerned to ensure that action range is seldom limited, at least in terms of availability of finance, since concern with bond ratings and share price should mean that

further funds can be raised if the proposed project justifies it. The search for expensive or specialist ventures with high barriers to entry, would also suggest that greater action range is perceived to be associated with higher quality earnings. For category 2 or 3 companies action range was clearly less, with a consequent reduction in the options which could be pursued. For such companies consideration of the action range was thus likely to be an important, if implicit, facet of every major decision.

The concept of *"resilience"*, which is further sub-divided into *"risk"* and *"endurance"*, also appears to have some empirical support from this study. The impact of individual projects on corporate financial profiles, which was carried out in virtually all companies, was one part of the risk assessment process. Another part, particularly (but not exclusively) for category 1 companies, was an assessment of the sensitivity of corporate cash flows to different variables. The concept of endurance appears to be of more variable importance. This is not to say that firms did not wish to endure, but simply that the overall approach to the financial markets, and the concentration of high quality earnings, found in most category 1 and the larger category 2 companies, meant that powers of endurance were likely to be high for such companies. Under such circumstances the concept of endurance seems likely to have little operational significance. For the remaining companies this is less likely to be true. Indeed, it is clear that the assessment of ability to survive long periods of recession was an important part of the overall appraisal process for many category 3 companies.

Overall, PARE analysis appears to be an interesting approach which provides useful insights into the decision making process, and a useful framework for analysis. The findings of this study provide some empirical support for it in the following ways:

- (i) The importance of the concept of strategic positioning is demonstrated
- (ii) Considerable emphasis was placed on being in a position to deal with the unexpected
- (iii) Several of the facets of the appraisal process which were given considerable attention in practice are very similar in concept to the four strategic elements. The usefulness of concepts such as action range and endurance, in terms of their impact on strategic decisions, is particularly apparent.

3.3 Conclusion on the links between finance and strategy

The need to put financial aspects of investment and financing decisions into a corporate strategy framework is clear, as is the fact that many companies are already doing so. Particularly important

factors are the broader environmental perspectives being taken by many companies, notably those of category 1, the early identification of problem areas, the continuous search for new opportunities, and the emphasis on positioning and flexibility. The maintenance of financial strength and flexibility represents a significant part of the positioning process. In this study the importance of criteria to do with stability and security were noted, as were ideas to do with action range and endurance. Overall, the importance of financial factors in decision making is undoubted, as is the need for an appropriate theory or model of finance to support decision making. However, decision making is seen to occur in a complex and uncertain environment, with decisions being made against a broad backcloth of economic and other environmental information, with the aim of obtaining, and retaining, some kind of position of relative competitive advantage. The importance of this background information depends upon the nature of the company and its activities. The emphasis on obtaining a competitive edge, coupled with a perceived need for the preservation of a flexible and adaptable approach, results in less emphasis being given to detailed forecasting, and more to an understanding of the markets themselves, and the impact of changes in these markets, whether foreseen or not. Such an approach places far less emphasis on optimisation than is implied by the normative theory of finance.

Until finance theory is set more firmly in a strategic context, and due recognition is given to the importance of flexibility in strategy development, the differences between finance theory and management practice will continue. While greater recognition of some of the practical implications of the theory of finance are undoubtedly called for, the findings of this study generally suggest that Donaldson's conclusion of 1963 remains essentially valid, namely that it would be finance theory and not management practice that would have to change, if the two were to continue to have a valid relationship with each other.

4. A Descriptive Model of Investment and Financing Decisions in the Shipping Industry

4.1 Introduction

Chapter 11 summarised the findings of this study, with regard to actual behaviour patterns in

companies in the shipping industry, in the area of investment and financing decisions. The preceeding sections of this chapter examined the implications of chapter 11 for the relevant parts of the theory of finance, and for related criticisms and potential links with the literature on corporate planning and strategy. In general, actual behaviour was found to be rather different from that which might have been expected if finance theory were correctly applied. Indeed, the ideas found in finance theory were seen to represent a relatively small part of the total decision making process. Furthermore, the earlier sections of this chapter reveal the considerable influence of ideas on corporate planning and strategic management, and of the validity of many of the criticisms made of finance theory, at least in terms of actual behaviour.

Given the above facts, it is clear that a need exists for a more comprehensive theory (or set of theories) to be developed. The findings of this study provide a detailed analysis of the way in which investment and financing decisions are made in the shipping industry. By changing the perspective on these findings, and making the assumption that the approaches identified will continue to be used in the future, it is possible to take some steps towards the development of a more comprehensive theory or set of theories. In doing this it should be noted that while considerable differences in behaviour were found to exist between individual companies in this study, a high degree of consistency was found within the categories, and for companies involved in similar trades. This suggests that the use of appropriate groupings would assist in the development of a more comprehensive theory or model. The remainder of this section therefore attempts to convert the findings of previous chapters into a broadly based descriptive model of behaviour in the area of investment and financing decisions in shipping, with different approaches being identified for different groups of companies. The two most important groupings relate to size and type of business, corresponding broadly with the three categories used within the study, and type of activity, namely bulk or liner operations. The model identified is positive, in that it is based upon actual behaviour patterns identified in this study. It is presented in such a way as to provide broad guidance on how firms are likely to approach actual investment and financing decisions in the shipping industry. However, in places actual behaviour appears to fall some way short of what might be considered desirable. In such places normative additions to the model have been made.

The model is developed in the form of a series of propositions relating to various aspects of the investment and financing decision. Some of these propositions are sufficiently general to apply to all companies. In other cases differences arise depending upon the groupings, i.e. category and/or type of

activity. In these cases the differences will be identified, usually in the form of a table showing the different behaviour patterns associated with the different groupings. In places it is possible to slot in various aspects of finance theory virtually as they stand. These places will be clearly identified. In some places the current state of the markets is causing certain attitudes which may not be permanent, making the assumption of continued behaviour along similar lines rather more questionable. In such cases supporting comments are made at the end of the relevant proposition. The propositions developed are clearly grounded in fact, and reflect an attempt to generalise the findings of the previous five chapters into a broad descriptive model of investment and financing decisions within companies involved in the shipping industry. The following through of each proposition as it relates to a particular company, category of company, and/or area of activity will permit the development of a set of models of behaviour, such that guidance to likely behaviour patterns can be obtained for different companies. The logic behind the various propositions, and the reasons for the likelihood of certain behaviour patterns, have already been identified in preceeding chapters.

Overall, this section aims to summarise the findings of the study in such a way as to provide an integrated framework for the consideration of investment and financing decisions, albeit in one particular industry. This framework is seen as drawing on issues relating to both corporate strategy and finance, and as putting financial considerations more clearly into a strategic framework. As such, it should provide a more relevant set of guidelines on actual behaviour in the area than would be obtained from the theory of finance. Further research into the approach used in other industries, when put alongside this framework, may well lead to the development of a more complex theory or model of decision making in the area of investment and financing. The framework identified below is seen as a step in that direction.

4.2 A Descriptive Model

Objectives

Proposition 1

Multiple objectives exist within organisations, and decisions will reflect a balance between them.

Proposition 2

Many objectives will be implicit, and decisions will frequently be made without a set of explicit

objectives existing.

Proposition 3

All companies will search for reasonable levels of profitability, but considerable differences of emphasis exist with regard to the need for this profitability to be regular.

Proposition 4

Objectives will vary according to the category of the company but are likely to include the objectives identified in Table 34, with the indicated level of importance.

Objective	Relative importance		
	High	Medium	Low
i) Achievement of reasonable profitability			
- emphasis on high quality earnings	Category 1		Categories 2/3
- emphasis on increases in wealth over time	Categories 2/3		Category 1
ii) Maintenance of a reasonable share price	Category 1		Categories 2/3
iii) Maintenance of good shareholder /market relations	Category 1	Category 2 public	Category 2 private Category 3
iv) Maintenance of a regular or increasing dividend	Category 1	Category 2 public	Category 2 private Category 3
v) Remaining in existing lines of business		Categories 2/3	Category 1
vi) Personal/family objectives		Categories 2/3	Category 1

Table 34. Objectives and their relative importance

Philosophies and Strategies

Proposition 5

The difference in emphasis with regard to earnings quality and the regularity of profits will have a significant effect on the lines of business in which companies will engage, and on the attitudes and

approaches to these different activities. Likely lines of business, and associated attitudes and approaches, are shown in Table 35.

Philosophy/Strategy	Relative importance		
	High	Medium	Low
i) Lines of business within shipping			
- Liner	Category 1	Category 2	Category 3
- Bulk	Category 3		Category 1
	Category 2		
- Specialist	Category 1	Category 2	Category 3
ii) Acquisition of assets for long term use	Category 1	Category 2	Category 3
iii) Use of high technology or specialist (expensive) ships	Category 1	Category 2	Category 3
iv) Use of general purpose or handy size ships	Category 3	Category 2	Category 1
v) Speculation on purchase of assets or businesses (ie. purchase in hope of capital gain)		Category 3	Category 2
			Category 1

Table 35. Lines of business and related attitudes

Proposition 6

Considerable emphasis will be placed on the establishment of a strategic position which provides a degree of flexibility, together with the capability to respond to opportunities and threats, as yet unseen, in a timely and effective way.

Proposition 7

The establishment of an appropriate strategic position can be broken down into four constituent elements.

- (i) Strategic positioning - the maintenance of a well balanced set of business activities, typically through diversification.
- (ii) Market flexibility - the maintenance of a flexible approach to markets, through such things as efficient facilities, flexible operations, multi-purpose facilities, efficient data bases, a balanced fleet, a balanced approach to chartering, a low cost fleet, high market share and a high quality service.

(iii) Operating flexibility – an approach to operations which permits alternative methods of operations as conditions and circumstances change, typically achieved through such things as efficient facilities, multi-purpose assets, a balanced fleet, and equipment ownership.

(iv) Financial strength and flexibility – the maintenance of adequate financial resources, or access to them, at all times.

The actual extent to which all these elements will occur will depend largely on the size and nature of the company, since clear constraints exist in the various types of company. The likely importance attached to the various elements is shown in Table 36.

Elements of Strategic Positioning	Relative importance		
	High	Medium	Low
i) Strategic positioning	Category 1	Category 2	Category 3
ii) Market flexibility	Category 1	* Category 2 *	* Category 3 *
iii) Operating flexibility	Category 2	Category 1	
	Category 3		
iv) Financial strength & flexibility	Category 1		
	Category 2		
	Category 3		

Table 36. Relative importance of Elements of Strategic Positioning

* Though the use of the sale and purchase markets to move out of certain markets could be perceived as market flexibility.

Proposition 8

Even where strategic positioning through diversification is given a high priority, limits to the process will generally be found. For US companies the areas of activity will tend to be more closely inter-related than those of UK companies.

Planning Systems and Associated Environmental and Economic Analysis

Proposition 9

Underlying all investment and financing decisions will be a degree of environmental and economic

analysis, sometimes set within a corporate planning framework, sometimes done on an ad hoc basis. This will provide a strategic framework for decision making, and will enable companies to make broad judgements on the most favourable areas for investment. This analysis will thus form an important stage in the decision making process.

Proposition 10

The nature of the environmental and economic analysis, and the importance of the various aspects of this analysis, will vary according to the size and type of company and the nature of its activities. Likely aspects and their relative importance are shown in Table 37.

Area of Analysis	Relative importance		
	High	Medium	Low
i) Macro-economic factors	Category 1	Category 2	Category 3
ii) Applications to shipping	Category 1	Category 2 Category 3	
iii) Supply side analysis (global)	Bulk companies	Specialist cos.	Liner companies
iv) Competitor analysis	Category 1 Liner/specialist	Category 2 Liner	Category 3 Cat 1/2 bulk
v) Analysis encapsulated within formal corporate planning framework	Category 1	Category 2	Category 3

Table 37. Nature of Analysis

Project Appraisal

Proposition 11

The appraisal of projects is a multi-stage, multi-criteria process. Typically the following areas are likely to be considered in the process.

- (i) The strategic implications of the project.
- (ii) The project figures themselves.
- (iii) The impact of the project on corporate figures.
- (iv) Funding and liquidity considerations.

Proposition 12

Many projects will tend to "grow out" of the corporate planning framework, so that the strategic implications will be considered automatically in the planning process. Where projects arise on an ad hoc basis, or a formal planning process does not exist, the first stage of any analysis is likely to include certain of the analytical stages identified in proposition 10.

Proposition 13

Considerable differences and difficulties will arise with regard to project definition. Only in the bulk trades are new ships likely to be regarded as separate or independent projects, and even then the idea of a balanced fleet is likely to be an important consideration. For the liner and specialised trades it is far more likely that new ships, or increases in capacity, will be regarded as part of a system or fleet, and analysed accordingly, using incremental analysis. The weighting given to the strategic aspects of the decision in such cases is likely to be considerable.

Proposition 14

A variety of individual project appraisal techniques will be used, reflecting a multi-criteria approach to decision making. Methods and likely relative importance are shown in Table 38. Many of these methods can be drawn directly from finance theory.

Appraisal Method	Relative importance		
	High	Medium	Low
i) Payback	Category 1	Category 3	Category 2
ii) Accounting rate of return for individual projects			Category 1 Category 2 Category 3
iii) Net present value	Category 1		Category 2/3
iv) Internal rate of return	Category 1		Category 2/3
v) Break-even freight rates	Bulk companies		liner/specialist companies

Table 38. Appraisal methods and their relative importance

Proposition 15

For many projects the degree of confidence in an ability to forecast future cash flows, particularly revenues, will be low.* Where a lack of confidence of this type exists little emphasis is likely to be placed on the use of discounting techniques. Discounting is likely to be of most significance where revenues are backed by charters, or in choosing between alternative methods of financing.

*At present confidence in forecasting shipping related flows is low, and likely to remain that way. Confidence is likely to be greater where formal planning systems are in operation.

Proposition 16

Where discounting is used more reliance will be placed on the use of Internal Rate of Return, which avoids the choice of a specific discount rate, than on Net Present Value.

Normative Proposition 16a

In deciding on an appropriate hurdle rate, careful consideration should be given as to the cash flows which are to be included (i.e. assuming 100% equity funding, or including financing flows), and the rates of return being obtained elsewhere for projects of similar risk. This requires more care in project cash flow identification and a greater awareness of the implications of the CAPM in terms of required rates of return.

Proposition 17

Where payback is used it is likely to be calculated on a cash flow basis, including debt service commitments.

Proposition 18

Considerable attention is likely to be placed on an evaluation of the cost/revenue relationship at different levels of utilisation (liner trades) or freight rate (bulk trades). For companies in the bulk trades break-even freight rates will be a significant figure in such an analysis.

Proposition 19

Where companies have a strong commitment to high quality earnings, an important part of the analysis relating to a project will be an assessment of the impact of the project on corporate figures. In such cases projects with an unfavourable impact on corporate figures, are likely to be rejected. An important part of this corporate analysis is likely to be a detailed analysis of the effect of the project

on overall corporate liquidity.

Proposition 20

The analysis of the effect of projects on corporate figures will be less important in companies which are structured on a "single ship company" basis, or which have substantial cash reserves, or which have conservative gearing ratios.

Proposition 21

The assessment of all major projects will involve the clear identification of the debt service commitments associated with the funding of the project, and the likely relationship of that commitment with potential revenues.

Proposition 22

Projects with any perceived potential for causing bankruptcy will be rejected.

Risk

Proposition 23

Risk analysis will generally relate more to corporate risk than to project risk. Corporate risk analysis is likely to cover both business risk and financial risk.

Proposition 24

Business risk will be reduced by diversification, in the larger companies. Elsewhere this will prove difficult, and risk analysis will be confined to broad considerations in terms of markets, politics, and related shipping activities. Strategies such as the use of general purpose ships, the purchase of ships at the bottom of the market, etc. may result.

Proposition 25

The assessment of financial risk is likely to concentrate on a detailed analysis of liquidity and potential liquidity problems. Considerable emphasis will be found in the private companies of category 2 and the category 3 companies, on being sure that the liquidity position is strong enough to carry through a series of adverse events. For category 1 companies the analysis of financial risk will be an integral part of the corporate planning system.

Proposition 26

Relatively limited use is likely to be made of techniques for dealing with project risk, especially those requiring some kind of assessment of probability of certain occurrences.

Normative proposition 26a

Greater attention should be paid to the assessment of project risk, through the use of a variety of techniques, so as to build up a better picture of the degree of risk inherent in the project.

It should be noted that many techniques already in existence offer useful insights into this area. More use should be made of them.

Proposition 27

The most likely technique to be found for assessing risk is that of sensitivity analysis. This technique is more likely to be used in conjunction with the assessment of the impact of individual projects on corporate figures.

Proposition 28

Attitudes to currency risk will vary. British companies and most other large companies are likely to avoid currency risk where possible. Behaviour patterns in other companies are likely to be more variable.

Financing**Proposition 29**

Only in the largest companies will a clear separation of the investment and financing decisions be found.

Concern with funding is likely to reflect all or some of the factors shown in Table 39.

Financing Concerns	Relative importance		
	High	Medium	Low
i) Availability of finance for new projects	Category 2	Category 3	Category 1
ii) Effect of subsidised finance	Category 2	Category 1*	Category 3
iii) Effect of alternative financial packages	Categories 2/3	Category 1*	
iv) Whether the project would pose any problems in terms of			Category 1
- share price			Categories 2/3
- bond rating			Category 1
- liquidity	Categories 2/3		Categories 2/3
- survival	Category 2		Category 1
			Categories 1/3

Table 39. Financing concerns

* There is a danger that these aspects will be largely ignored by some category 1 companies.

Proposition 30

Investments in vessels and other fixed assets are likely to be financed as shown in Table 40.

Method of financing	Relative importance		
	High	Medium	Low
i) Yard credit on new ships	Categories 1/2		Category 3*
ii) Bank loans	Category 3	Category 2	Category 1**
iii) Leasing		Category 1	Categories 2/3***
iv) Corporate loans	Category 1		Category 2
			Category 3
v) New equity (other than retentions)		Category 1	Categories 2/3
vi) Retentions		Categories 1/3	Category 2

Table 40. Financing methods

* The relative importance of yard credit for new ships for category 3 companies is shown at this level since relatively few new ships will be bought, and some will be partly paid for in cash.

** The relative importance of bank loans overall for category 1 and 2 companies is likely to be lower than for category 3, but significant use is likely to be made of top ups and wraparound and stretching facilities.

*** Leasing will not be favoured by many category 2 and 3 companies because of the loss of flexibility which results with regard to asset use and disposal.

Proposition 31

For new buildings the choice of yard is likely to be considerably influenced by the financial arrangements.

Proposition 32

Differences in the effective period for which loans will be able to be raised are likely to arise, as indicated in Table 41.

Period of Loan	Probability of obtaining this period		
	High	Medium	Low
Loans - over 10 years	Category 1	Category 2	Category 3
- 5 - 10 years	Category 1	Categories 2/3	
- under 5 years	All categories		
Long term financial leases (10-15 years)	Category 1		Categories 2/3

Table 41. Loan periods obtained

Proposition 33

Differences in attitudes to the amount of debt taken up are likely to be found, as shown in Table 42.

Borrowing Policy	Likelihood of occurrence		
	High	Medium	Low
i) Borrow maximum amount possible on an individual project		Category 1	Category 2 Category 3
ii) Set an overall limit to debt	Category 1 Category 3		Category 2
iii) Conservative debt/equity position	Category 1 Some category 3	Category 2	Some category 3

Table 42. Attitudes to debt

Proposition 34

Very few companies will set target capital structures. Capital structure per se is unlikely to be a decision variable. Attention is likely to be concentrated on the analysis of the factors shown in Table 43.

Influence on Capital Structure	Relative importance		
	High	Medium	Low
i) Perceived effect of capital structure on share price		Category 1 *	Category 2 private Category 2 public Category 3
ii) Perceived effect of capital structure on bond ratings and ability to obtain further funds		Category 1	Category 2 Category 3
iii) The relationship between financial reserves, profitability and debt service requirements	Categories 2/3	Category 1 **	

Table 43. Influences on capital structure

*For category 1 companies, relative importance is likely to be fairly low, as long as debt/equity ratios are below an acceptable level (say 40-50%).

**For category 1 companies concern with interest cover is a likely surrogate. Again this

relationship is likely to be the subject of careful scrutiny at the corporate planning stage.

Proposition 35

Other factors which will considerably affect the capital structure, and which will influence the financing decision, are:

- (i) the relationship between new investment opportunities and the availability of internal funds. Many category 1 companies, with their high quality earnings, are likely to have fairly high self-financing ratios. In the other categories this ratio is likely to be much more variable;
- (ii) the nature of the assets being funded. Debt will be effectively limited by the amount of security which can be provided, which in turn is determined by the current market value of the assets. If the ratio of current market value of assets/debt falls below a certain ratio (125-150%) restrictive covenants are likely to be applied by lenders, an eventuality which will be avoided by all companies if possible;
- (iii) the effect of market fashion and changing economic conditions.

5. Conclusions, Limitations of the Study and Direction of Future Research

The set of propositions outlined above provides a guide to likely behaviour in the area of investment and financing decisions within the shipping industry. Attention is also drawn, through the two normative propositions, to areas where actual behaviour could be improved by the use of certain techniques and concepts outlined in finance theory. In general, however, the relative lack of importance of finance theory in actual investment decisions is apparent. Overall, the model developed is one of a more complex approach to decision making than is generally assumed, which should provide a useful framework for making actual decisions, and for future research.

Inevitably, given the broad based approach used in this study, a number of limitations exist.

although many of these can be seen as pointers to further research. The more important of these limitations are given below:

(i) This emphasis on a specific industry, namely shipping, means that the summary and conclusions drawn are clearly based upon discussions with companies and organisations with substantial interests in shipping. The view may well be taken that any conclusions drawn must be restricted to that industry, which undoubtedly has some interesting and somewhat peculiar features, as well as some very interesting and individual characters. Such an approach must necessarily be the one taken here, since the evidence collected clearly comes principally from this industry. Nevertheless, the comments already made with regard to category 1 companies make it clear that few such companies were involved exclusively, or even principally, in shipping. It would thus appear reasonable to hypothesize that the behaviour of the category 1 companies in this survey would be consistent with other diversified conglomerates, albeit in different industries. If this were true the conclusions of this study, at least with regard to category 1 type companies, would become generally applicable to diversified conglomerates. The results for category 2 and 3 companies seem more likely to reflect the peculiarities of the shipping industry. Nevertheless, it would be very surprising if further studies of the behaviour of small or medium firms, in other industries, did not display some of the characteristics found in this study. The results found in this study are thus seen as providing a useful base for further research in different industries.

(ii) Section 4 of Chapter 4 outlines a variety of criticisms and limitations of rational planning systems. There is little doubt that the points discussed in this section pose potentially serious problems for both finance theory and the theory relating to corporate strategy. No systematic attempt was made in this study to consider issues relating to organisational structures, political behaviour, inter-personal or group behaviour, or motivational aspects of decision making, though in some instances discussion of these issues "emerged" as interviews progressed. Undoubtedly this means that the decision making process is even more complex than is suggested by this study. More extreme critics of rational planning systems may well argue that omissions of this type make it virtually impossible to establish how decisions are made. This latter view is not accepted. It should be remembered that the model set out in section 4 of this chapter has been derived from individual perceptions of the decision making

process, and as such is likely to reflect actual behaviour, at least in the areas for which detailed questions were asked. The model developed is not claimed to be an all embracing theory of decision making, but is seen as providing a basic framework for approaching economic and financial aspects of decision making, and ensuring that these are set clearly in a strategic context. This does not deny the impact of other factors on the process, and further research in this area would be useful. It is nonetheless interesting to note that the theory developed remains rooted in rationality, although the rationality is that of managers working in a complex and volatile world, being concerned with the survival and continued profitability of their organisations. However, given the intensely competitive nature of shipping, it may be that the market forces a degree of rationality on the decision making process which may not exist in other industries.

(iii) It may be argued that one of the more important variables in the development of a theory or model is the effect of current economic and market conditions. Undoubtedly the conditions within the shipping industry in recent years have had an effect on attitudes, decision processes and related strategies, perhaps most noticeably for category 2 companies. Changes in such conditions could change any of these. At present there is little evidence to suggest that any further dramatic changes are imminent, but the possibility remains. Research into different industries would identify patterns peculiar to the shipping industry. However, given the spread of interests of most category 1 companies it seems unlikely that changing economic and market conditions would lead to significant changes in the propositions listed above, as they relate to such companies. Considerable changes might well result in lines of activity, and associated strategies, but the broad underlying principles seem likely to be unchanged.

(iv) No attempt has been made in this study to relate decision making processes, philosophies or strategies, to profitability, or to establish which were the most effective strategies. This represents a potentially very useful area for further research.

(v) A number of areas within the study could usefully be developed further, now that a broad theoretical framework has been established. These areas are as follows:

(a) Further work on the reasons for the non-use, or non-communication, of objectives or targets, along the lines of that already carried out by Quinn (1977), would be useful.

(b) Proposition 8 identified the importance of diversification to category 1 companies. Further time could usefully be spent on analysing the extent to which this policy is pursued, in terms of the number of different activities entered into, and their relationship to each other. The evidence collected suggests that American companies may well look for closer links between the various lines of business than do their UK counterparts. The reasons for this, and the relative success of the various policies require further clarification.

(c) The study identifies the components of the composite investment decision, and attempts to evaluate their relative importance. Inevitably this latter evaluation is based upon the viewpoint of certain executives within the firms. Further useful insights into the overall appraisal process could be obtained by detailed case study analyses of this area. Such studies would be particularly useful in clarifying the political and interpersonal aspects of the decision making process, which have not formed any part of this study. Further studies which attempted to evaluate the relative importance of the various components of the investment decision making process in a more objective way would also be useful. Particularly interesting areas for further examination are the four stage division of the ideas on positioning and flexibility, and the relative importance of the various influences on capital structure.

In spite of these limitations, this study nonetheless provides a number of useful insights into investment and financing decisions, and achieves the aims set out at the beginning. Its contribution can be summarised as follows:

(i) It contains a detailed appraisal of methods used to analyse and finance capital projects in the shipping industry. No study of this type has been related to the shipping industry. As such it is seen as providing a useful addition to the industry literature, which should provide guidance to practising managers.

(ii) It enables a detailed assessment to be made of the practical relevance of the theory of finance to one particular industry. This provides support to various other studies and writings which are critical of finance theory. It identifies areas of overlap and of conflict between the normative theory of finance and actual practice, and provides clear evidence that the degree of overlap between them is limited.

(iii) It provides an indication of areas of overlap and linkage between the theory of finance and that relating to corporate strategy, in the context of the shipping industry. As such it is seen as providing further support and impetus to work which attempts to link these two areas. Relatively little work has been done in this area, in spite of its obvious importance, underlined by the findings of this study.

(iv) It provides a descriptive model of investment and financing decisions in the shipping industry. This is seen as providing a useful alternative approach to the normative theory of finance, being likely to conform more closely to actual practice. As such it provides an alternative framework for analysis, with emphasis being put on different aspects of decision making. Particularly important were the concerns with positioning and flexibility, and the implications of these concerns for appraisal methods and strategies chosen. The model outlined may also be seen as providing a step towards the development of a more complex general theory relating to investment and financing decisions.

Literature References

Al-Bazzaz S. & Grinyer P.H. (1980). How planning works in practice – A survey of 48 UK companies.

Long Range Planning, Vol 13, August, 30-42.

Aluminum Company of America. A brief story of aluminum and ALCOA. Company publication.

Andrews K.R. (1980). The concept of corporate strategy. Richard D. Irwin, Homewood, Illinois.

Ansoff H.I. (1965). Corporate Strategy McGraw-Hill, New York.

Ansoff H.I. (1969). Business Strategy Penguin Books, London.

Ansoff H.I. (1977). The state of practice in planning systems. Sloan Management Review. Winter, 1-24.

Ansoff H.I. (1979). Strategic Management. John Wiley, New York.

Ansoff H.I., Declerck R.P. & Hayes R.L. (1976). From strategic planning to strategic management. John Wiley, New York.

Ansoff H.I. (1984). Implanting Strategic Management. Prentice Hall International, New Jersey.

Ashton D.J. & Atkins D.R. (1977). Multicriteria programming for financial planning. Paper presented at the 23rd international meeting of TIMS, Athens.

Barnard B. (1983). British Shipbuilders pleads for "crisis aid". Journal of Commerce, July 28.

- Baumol W.J. (1961). Economic theory and operations analysis. Prentice- Hall International, New Jersey.
- Beargie T. (1983). 67% subsidy needed to build in United States. American Shipper, June, P68.
- Benson J.K. (1977). Organisations : A dialectical view. Administrative Science Quarterly, 22, 1-21.
- Berry A.J. (1984). The control of capital investment. Journal of Management Studies, 21, 1, 61-81.
- Bertoneche M.L. (1981). Impact of increasing complexity of business conditions on the capital investment process. In Derkinderen F.G.J. & Crum R.L. Readings in strategy for corporate investment. Marshfield, Mass, Pitman.
- Bhide A. (1986). Hustle as strategy. Harvard Business Review, Sept/Oct, 59-65.
- Blass W.P. (1983). Ten years of business planners. Long Range Planning, Vol 16, Number 3, June, 21-24.
- Bloom P.N. & Kotler P. (1975). Strategies for high market share companies. Harvard Business Review, Nov/Dec, 63-72.
- Bower D.H., Bower R.S. & Logue D.E. (1984). Arbitrage pricing theory and utility stock returns. Journal of Finance, Vol XXXIX, Number 4, Sept, 1041-1054.
- Bower J.L. (1972). Managing the resource allocation process. Richard D. Irwin, Homewood, Illinois.
- Branch A.E. (1982). Economics of shipping practice and management. Chapman & Hall, London.

Brealey R. & Myers S. (1981). Principles of Corporate Finance. McGraw Hill International, Tokyo.

Brunsson N. (1982). The irrationality of action and action rationality : Decisions, ideologies and organizational actions. Journal of Management Studies, 19, 1, 29-44.

Bryman A. (1984). Organization studies and the concept of rationality. Journal of Management Studies, 21, 4, 391-408.

Buckingham L. (1983). UN code will deter banks from backing liner shipping - financier. Lloyds List, October 6.

Cable J. & Steer P. (1977). On the industrial organisation and profitability of large UK companies. Unpublished working paper, Liverpool Polytechnic, February.

Cannon C. (1983). All the pieces in place, Reynolds will focus on internal growth. Los Angeles Times, March 6.

Carpenter M.A. (1986). Planning vs strategy - Which will win?. Long Range Planning, Vol 19, Number 6, 50-53.

Carter E.E. (1971). The behavioral theory of the firm and top level corporate decisions. Administrative Science Quarterly, December, 413-428.

Carter E.E. (1981). International investment : The engineering of choice versus portfolio diversification. In Derkinderen F.G.J. & Crum R.L. Readings in strategy for corporate investment. Marshfield, Mass, Pitman.

Channon D.F. & Jalland M. (1979). Multinational strategic planning. Macmillan, London.

Cheng P. (1979). Financial management in the shipping industry. Cornell Maritime Press, Maryland.

Clifford D.K. (1973). Managing the threshold company. McKinsey & Co, New York.

Coates M.B. (1983). Pitfalls in portfolio planning. Long Range Planning, Vol 16, Number 3, June, 47-56.

Coda V. & Dematte C. (1981). Strategic management and financial planning. In Derkinderen F.G.J. & Crum R.L. Readings in Strategy for Corporate Investment. Pp 98-105, Marshfield, Mass, Pitman.

Cohen M.D., March J.G. & Olsen J.P. (1972). A garbage can model of organizational choice. Administrative Science Quarterly, 17, 1-25.

Crum R.L. & Derkinderen F.G.J. (1981). Capital budgeting under conditions of uncertainty. Martinus Nijhoff, Boston.

Cyert R.M. & March J.G. (1963). A behavioural theory of the firm. Prentice-Hall, New Jersey.

Daily Commercial News (1984). Overcapacity : Root of shipping problems. January 27.

DeAngelo H. & Masulis R.W. (1980). Optimal capital structure under corporate and personal taxation. Journal of Financial Economics, 8, March, 3-29.

Denning B.W. & Lehr M. (1971). The extent and nature of corporate long range planning in the United Kingdom - I. The Journal of Management Studies, Vol 8, Number 2, May, 145-159.

Denning B.W. & Lehr M. (1972). The extent and nature of corporate long range planning in the United Kingdom -II. The Journal of Management Studies, Vol 9, Number 1, February, 1-18.

Derkinderen F.G.J. & Crum R.L. (1979). Project Set Strategies. Martinus Nijhoff, Boston.

Derkinderen F.G.J. & Crum R.L. (1981). Readings in Strategy for Corporate Investment. Pitman, Marshfield, Mass.

Derkinderen F.G.J. & Crum R.L. (1984). Pitfalls in using portfolio techniques - Assessing risk and potential. Long Range Planning, Vol 17, Number 2, April, 129-136.

Donaldson G. (1963). Financial goals : Management vs Stockholders. Harvard Business Review, 41, 116-129.

Donaldson G. (1969). Strategy for Financial Mobility Division of Research, Graduate School of Business Administration, Harvard University, Boston.

Donaldson G. (1985). Financial goals and strategic consequences. Harvard Business Review, May/June, 57-66.

Douglas P. (1984). Forum : Let's focus on freight rates. Seatrade, February.

Drucker P.F. (1985). The discipline of innovation. Harvard Business Review, May/June, 67-72.

Fairplay Year Book (1981). World Shipping.

Fama E.F. (1977). Risk adjusted discount rates and capital budgeting under uncertainty. Journal of Financial Economics, 5, August, 3-24.

Franke G. (1981). Information, property rights, and the theory of corporate finance. In Derkinderen F.G.J. & Crum R.L. (eds) Readings in strategy for corporate investment. Marshfield, Mass, Pitman, Pp 63-86.

- Frankel E.G. (1982). Management and operations of American shipping. Auburn House, Boston.
- Freeman R.E. (1984). Strategic management – A stakeholder approach. Pitman, Mass.
- Gandemo B. (1981). The influence of increased environmental turbulence on corporate investment and financial planning. In Crum R.L. & Derkinderen F.G.J. (eds) Capital budgeting under conditions of uncertainty. Boston, Martinus Nijhoff, Pp21-37.
- General Council of British Shipping (1982). British Shipping Statistics 1981. London.
- Glaser B.C. & Strauss A.L. (1967). The discovery of grounded theory. Aldine.
- Gluck F.W., Kaufman S.P. & Walleck A.S. (1980). Strategic management for competitive advantage. Harvard Business Review, July/August, 154-161.
- Gluck F.W. (1984). Vision and Leadership. Interfaces, 14:1, Jan/Feb, 10-18.
- Glueck W.F. (1972). Business Policy : Reality and promise. Academy of Management Proceedings, August.
- Goldman P. (1978). Sociologists and the study of bureaucracy : A critique of ideology and practice. The Insurgent Sociologist, VIII, 21-30.
- Gordon M.J. (1981). Interest in a corporation of its management, workers and country. In Derkinderen F.G.J. & Crum R.L. (eds) Readings in strategy for corporate investment. Marshfield, Mass, Pitman, Pp 31-38.
- Gordon M.J. (1982). Leverage and the value of a firm under a progressive personal income tax. Journal of Banking & Finance, 6, 483-493.

Gray D.H. (1986). Uses and misuses of strategic planning. Harvard Business Review, Jan/Feb, 89-97.

Greenley G.E. (1986). Does strategic planning improve company performance? Long Range Planning, Vol 19, Number 2, April, 101-109.

Grinyer P.H. & Norburn D. (1974). Strategic planning in 21 UK companies. Long Range Planning, August, 80-88.

Grinyer P.H. & Wooller J. (1975). Corporate models today : A new tool for financial management. ICAEW London.

Grinyer P.H. (1983). Financial modelling for planning in the UK. Long Range Planning, Vol 16, Number 5, October, 58-72.

Gustafson J.A. (1982). The allocation of capital resources and the role of the investment analyst : Techniques for risk analysis. Paper given at Seatrade Academy conference. "Understanding Investments in Shipping", Cambridge, January.

Hall W.K. (1980). Survival strategies in a hostile environment. Harvard Business Review, Sept/Oct., 75-85.

Hall G. & Howell S. (1985). The experience curve from the economists' perspective. Strategic Management Journal, September.

Hamermesh R.G., Anderson M.J. & Harris J.E. (1978). Strategies for low market share businesses. Harvard Business Review, May/June, 95-102.

Hamermesh R.G. (1983). Strategic Management. Harvard Business Review Executive Book Series, John Wiley, New York.

Hamermesh R.G. & White R.E. (1984). Manage beyond portfolio analysis. Harvard Business Review, Jan/Feb, 103-109.

Hamermesh R.G. (1986). Making planning strategic. Harvard Business Review, July/Aug, 115-120.

Hampton J.J. (1979). Evaluating shipping transactions. World Trade Institute, New York.

Hargreaves D. (1983). Handy-sized bulkers - Market prospects and investment opportunities examined. International Bulk Journal, September, 62-67.

Harrington D.R. (1983). Whose beta is best? Financial Analysts Journal, July/Aug, 67-73.

Harvey D. (1982). Strategic Management. Charles E. Merrill, Columbus, Ohio.

Haselhoff F. (1976). A new paradigm for the study of organisational goals. In Ansoff H.I., Declerck R. & Hayes R. (Eds). From strategic planning to strategic management. John Wiley, New York, 15-27.

Hastie K.L. (1974). One businessman's view of capital budgeting. Financial Management, 3, Winter, 36-44.

Hax A.C. & Majluf N.S. (1983). The use of the growth-share matrix in strategic planning. Interfaces, Vol 13, 1, Feb, 46-60.

Hax A.C. & Majluf N.S. (1984). The corporate strategic planning process. Interfaces 14 : 1, Jan/Feb, 47-60.

Hayes R.H. & Garvin D.A. (1982). Managing as if tomorrow mattered. Harvard Business Review, May/June, 70-79.

Hayes R.H. (1985). Strategic planning : Forward in reverse. Harvard Business Review, Nov/Dec, 111-119.

Henderson B.D. (1984). The logic of business strategy. Ballinger.

Hertz D.B. (1964). Risk analysis in capital investment. Harvard Business Review, 42, January, 95-106.

Hertz D.B. (1968). Investment policies that pay off. Harvard Business Review, 46, Jan/Feb, 96-108.

Hertz D.B. & Thomas H. (1983). Risk analysis and its applications. John Wiley, Chichester.

Higgins J.C. & Finn R. (1977). Planning models in the UK : A survey. Omega, 5(2), 133-147.

Higgins J.C. (1983). Some trends in corporate modelling. Omega, Vol 13, Number 6, 495-500.

Hiltzheimer C.I. (1982). Improving the operating efficiency of the US flag merchant marine. Address before the Joint Maritime Congress, Washington, June 15.

Hodder J.E. & Riggs H.E. (1985). Pitfalls in evaluating risky projects. Harvard Business Review, Jan/Feb, 128-135.

Holt J.A. (1982). Shipping investment appraisal : Alternative decision criteria. Paper given at Seatrade Academy conference, "Understanding Investments in Shipping", Cambridge, January.

Holt J.A. (1982). Evaluation of risk in shipping investments. Paper given at Seatrade Academy conference, "Understanding Investments in Shipping", Cambridge, January.

Hull J.C. (1982). Conflicts of interest between shareholders and managers. The Investment Analyst, October, 4-8.

Hussey D. & Langham M. (1978). Corporate planning : The human factor. Pergamon Press, Oxford.

Hussey D.E. (1984). Strategic management : Lessons from success and failure. Long Range Planning, Vol 17, Number 1, February, 43-53.

Jessop A. (1981). Risk preferences and probabilities assessment. Paper given at Seatrade Academy conference, "Understanding Investments in Shipping", Cambridge, January.

Jessop A. (1981). Uncertainty and statistical decision theory. Paper given at Seatrade Academy conference, "Understanding Investments in Shipping", Cambridge, January.

Jessop A. (1982). Treatment of risk and uncertainty. Paper given at Seatrade Academy conference, "Understanding Investments in Shipping", Cambridge, January.

Jonsson S.A. & Lunden R.A. (1977). Myths and wishful thinking as management tools. In Nystrom P.C. & Starbuck W.H. (eds). Prescriptive models in organisations. Amsterdam, North-Holland, Pp157-170.

Johnson G & Scholes K. (1984). Exploring corporate strategy. Prentice Hall International, London.

King P. (1975). Is the emphasis of capital budgeting misplaced? Journal of Business Finance and Accounting, Vol 2, Number 1, Spring, 69-81.

King W. & Cleland D. (1978). Strategic planning and policy. Van Nostrand Reinhold, New York.

Klein R. (1982). Corporate-based financial modelling. Journal of Systems Management, 33(5), 6-13.

Knoeber C.R. & Flath D. (1980). Taxes, failure costs, and optimal industry capital structure : An empirical test. Journal of Finance, 35, 99-117.

Lawrence P. & Lorsch J. (1967). Organisation and environment. Harvard Business School, Boston.

Lenz R.T. & Lyles M.A. (1985). Paralysis be analysis : Is your planning system becoming too rational? Long Range Planning, Vol 18, Number 4, August, 64-72.

Lessard D.R. (1981). Evaluating international projects : An adjusted present value approach. In Crum R.L. & Derkinderen F.G.J. (eds) Capital budgeting under conditions of uncertainty. Boston, Martinus Nijhoff, 118-137.

Levis M. (1985). Are small firms big performers? The Investment Analyst, 76, April, 21-27

Levy H. (1984). Measuring risk and performance over alternative investment horizons. Financial Analysts Journal, March/April, 61-68

Linneman R.E. & Kennell J.D. (1977). Shirt-sleeve approach to long range plans. Harvard Business Review, March/April, 141-150.

Lloyds Shipping Economist (1983). Slots for Sale. December.

Logue D.E. (1981). Some thoughts on corporate investment strategy and pure strategic investments. In Derkinderen F.G.J. & Crum R.L. (eds) Readings in strategy for corporate investment. Marshfield, Mass, Pitman, 87-97.

Lorange P. & Vancil R.F. (1976). How to design a strategic planning system. Harvard Business Review, Sept/Oct, 75-81.

MacMillan K. (1986). Strategy : Portfolio analysis. Journal of General Management, Vol 11, Number 4, Summer, 94-112.

McKinsey & Co. (1978). Strategic leadership : The challenge to chairmen. Company publication.

Maddams P. (1982). Risk management in shipping. Paper presented at the Seatrade Academy Conference, "Understanding Investments in Shipping", Cambridge, January.

March J.G. & Olsen J.P. (1976). Ambiguity and choice in organizations. Universitetsforlaget, Bergen.

Marine Engineering Log (1983). World shipbuilding. June 15.

Marris R. (1964). The economic theory of managerial capitalism. Macmillan, London.

Marshall P.S. (1985). The experience curve and limit pricing as a means of integrating portfolio matrices into capital budgeting. Doctoral dissertation, University of Bath.

Martin J.D., Petty J.W., Keown A.J. & Scott D.E. (1979). Basic Financial Management. Prentice Hall, New Jersey.

Meredith J.R. (1984). Reconsidering the decision making approach to management. Omega, Vol 12, Number 4, Pp 347-352.

Merret A.J. & Sykes A. (1963). The finance and analysis of capital projects. Longman, London.

Meyer J.W. & Rowan B. (1977). Institutionalized organizations : Formal structure as myth and ceremony. American Journal of Sociology, 83, 340-363.

Meyer J.W., Scott W.R. & Deal T.R. (1981). Institutional and technical sources of organizational structure. In Stein H. (ed) Organization and the human services. Philadelphia, Temple University Press, Pp 151-179.

Miller D. (1981). Towards a new contingency approach : The search for organizational gestalts. Journal of Management Studies, 18, 1, 1-26.

Miller M.H. (1977). Debt and Taxes. Journal of Finance, 32, May, 261-276.

Mintzberg H., Raisinghani D. & Theoret A. (1976). The structure of 'unstructured' decision processes. Administrative Science Quarterly, June, 246-275.

Mintzberg H. (1985). The organization as political arena. Journal of Management Studies, 22:2, 133-154.

Modigliani F. & Miller M.H. (1958). The cost of capital, corporation finance, and the theory of investment. American Economic Review, 48, June, 261-297.

Modigliani F. & Miller M.H. (1963). Corporate income taxes and the cost of capital : a correction. American Economic Review, 53, June, 433-443.

Moon J.R. (1982). Discounted cash flow decision criteria. Paper presented at the Seatrade Academy Conference, "Understanding Investments in Shipping", Cambridge, January.

Moore P.G. & Thomas H. (1976). The anatomy of decisions. Penguin, London.

Morison R.F. & Dunlap C. (1983). U.S. 'to get tough' in face of Unctad code. Journal of Commerce, September 23.

Morison R.F. (1984). GAO analyses ship dependence on preference. Journal of Commerce, Feb 13.

Morison R.F. (1984). Move afoot to revive shipbuilding subsidies. Journal of Commerce, March 12.

Myers S. (1984). Finance theory and financial strategy. Interfaces 14 : Jan/Feb, 126-137.

Myers S. (1984). Capital structure puzzle. Working paper. Alfred P. Sloan School of Management, MIT, Cambridge, Mass, April.

Nemirow S.B. (1979). Operating U.S. flag vessels in world wide competition. Paper presented at the Propeller Club of the United States. American Merchant Marine Conference, New Orleans, Pp11-12.

Neuhaser C.W. (1979). U.S. maritime policy - Needed for economic security. Paper presented at the Propeller Club of the United States. American Merchant Marine Conference, New Orleans, Pp 38-39.

Neuhaser C.W. (1980). American merchant marine - Shadow or substance. Paper presented at the Propeller Club of the United States. American Merchant Marine Conference, Seattle/Tacoma, Pp 8-9.

Norman V. (1981). Chartering and sale and purchase optimisation. Paper presented at the Seatrade Academy Conference. "Ship Finance", Hong Kong, November.

Oceanic Finance Corporation. (1979). Datapaper. (Ref 799) Autumn.

Pettigrew A.M. (1973). The politics of organisational decision making. Tavistock, London.

Petty J.W. & Scott D.F. (1981). Capital budgeting practices in large U.S. firms : A retrospective analysis and update. In Derkinderen F.G.J. & Crum R.L. (eds) Readings in strategy for corporate investment. Marshfield, Mass, Pitman, Pp9-28.

Pfeffer J. (1977). Power and resource allocation in organizations. In Staw B.M. & Salancik G.R. (eds) New directions in organizational behaviour. Chicago, St Clair Press, Pp 235-265.

Pfeffer J. (1978). The micropolitics of organizations. In Meyer M.W. & associates Environments and organizations. San Francisco, Jossey-Bass, Pp 29-50.

Pfeffer J. (1981). Power in organizations. Pitman, Boston, Mass.

Pike R.H. (1982). Capital budgeting in the 1980's : A major survey of the investment practices in large companies. ICMA Occasional Paper.

Pinches G.E. (1982). Myopia, capital budgeting and decision making. Presidential address - Financial Management Association, October 1981. Printed in Financial Management, Autumn 1982, 6-19.

Poensgen O. (1974). Organizational structure, context and performance. Working paper number 74-49, European Institute for Advanced Studies in Management, November.

Porter J. (1983). British shipbuilders struggling. Journal of Commerce, July 22.

Porter M. (1980). Competitive strategy : Techniques for analysing industries and competitors. Free Press, New York.

Quinn J.B. (1977). Strategic goals : Process and politics. Sloan Management Review, Fall, 21-37.

Quinn J.B. (1978). Strategic change : " Logical incrementalism". Sloan Management Review, Fall, 7-19.

Quinn J.B. (1980). Managing strategic change. Sloan Management Review, Summer, 3-20.

Raiffa H. (1968). Decision Analysis. Addison-Wesley, Reading, Mass.

Ramanujam V., Venkatraman N. & Camillus J.C. (1986). "Objectives-based" evaluation of strategic planning systems. Omega, Vol 14, Number 4, 299-306.

Reinganum M. (1981). Abnormal returns in small firm portfolios. Financial Analysts Journal, March/April, 52-56.

Reinhardt U.E. (1973). Break-even analysis for Lockheed's Tristar : An application of financial theory. Journal of Finance, 28, September, 821-838.

Rich C.A. (1982). Corporate planning in shipping and the need for investment appraisal. Paper presented at the Seatrade Academy Conference, "Understanding Investments in Shipping", Cambridge, January.

Robinson J. (1986). Paradoxes in planning. Long Range Planning, Vol 19, Number 6, December, 21-24.

Roll R. & Ross S.A. (1984). The arbitrage pricing theory approach to strategic portfolio planning. Financial Analysts Journal, May/June, 14-26.

Ross S.A. (1976). The arbitrage theory of capital and pricing. Journal of Economic Theory, December, 341-360.

Ross S.A. (1985). Debt and taxes under uncertainty. Journal of Finance, Vol LX, Number 3, July, 637-658.

Rothschild W.E. (1976). Putting it all together. Amacom, New York.

Royal Dutch Shell Group, (1976). The directional policy matrix. Company publication.

Salaman G. (1979). Work organizations : Resistance and control. Longman, London.

Schmidt R. (1981). Flexibility of corporate planning models in the case of changing objectives. In

Crum R.L. & Derkinderen F.G.J. (eds) Capital budgeting under conditions of uncertainty. Boston, Martinus Nijhoff, 174-187.

Schoeffler S., Buzzell R.D. & Heany D.F. (1974). Impact of strategic planning on profit performance.

Harvard Business Review, March/April, 137-145.

Schreffler R. (1983). Strategic planning for bulkers. American Shipper, June, 69.

Schreffler R. (1984). Ogden Marine spin-off complete. American Shipper, Feb.

Scott J.M. (1976). A theory of optimal capital structure. Bell Journal of Economics, Spring, 33-54.

Shanken J. (1982). The arbitrage pricing theory : Is it testable? Journal of Finance, XXXVII, December, 1129-1140.

Shanken J. (1985). Multi-Beta CAPM or equilibrium APT ? A reply. Journal of Finance, Vol XL, Number 4, Sept, 1189-1196.

Shear H.E. (1983). Remarks prepared for delivery by Admiral Harold E. Shear, USN (Ret), Maritime Administrator, U.S. Department of Transportation. International Symposium on Liner Shipping III. Bremen, Germany, November 2.

Simat N.S. (1979). Potential cargo and shipping markets for the eighties. Paper presented at the Propeller Club of the United States. American Merchant Marine Conference, New Orleans, 21-22

Simon H. (1955). A behavioural model of rational choice. Quarterly Journal of Economics, Vol 69, 99-118.

Simon H. (1957). Models of Man. John Wiley, New York.

Sletmo G.K. & Williams E.W. (1981). Liner conferences in the container age. MacMillan, New York.

Spronk J. (1981). Interactive multiple goal programming as an aid for capital budgeting and financial planning with multiple goals. In Crum R.L. & Derkinderen F.G.J. (eds) Capital budgeting under conditions of uncertainty. Boston, Martinus Nijhoff, 174-187.

Steiner G.A. & Miner J.B. (1977). Management policy and strategy. Collier Macmillan, London.

Steiner G.A. (1983). Formal strategic planning in the United States today. Long Range Planning, Vol 16, Number 3, June, 12-17.

Stevenson H.H. (1976). Defining corporate strengths and weaknesses. Sloan Management Review, Spring, 51-68.

Stolt-Nielsen. Stolt-Nielsen - the bulk liquid distribution company. Stolt-Nielsen company publication.

Stryker R.F. (1979). U.S. maritime subsidies - In world perspective. Paper presented at the Propeller Club of the United States. American Merchant Marine Conference, New Orleans, 40-41.

Sutton C.J. (1980). Economics and corporate strategy. Cambridge University Press, Cambridge.

Sychrava L. & Ingham M.J. (1979). Risk management in bulk shipping - 1. Paper presented at the Seatrade Academy Conference. "Shipping investment/disinvestment appraisal", Cambridge, July.

Sychrava L. & Ingham M.J. (1979). Risk management in bulk shipping - 2. Paper presented at the Seatrade Academy Conference, "Shipping investment/disinvestment appraisal", Cambridge, July.

Sychrava L. (1982) Risk management in bulk shipping. Paper presented at the Seatrade Academy Conference, "Understanding Investments in Shipping", Cambridge, January.

Tagliabue J. (1984). Soviet-bloc inroads on world shipping. New York Times, Jan 30.

Taylor B. (1971). The future development of corporate strategy. The Journal of Business Policy, 2(2) : 22-38.

Taylor B. (1982). The political dimension. In Taylor B. & Hussey D. The Realities of planning. Oxford, Pergamon Press, Pp66-78.

Taylor B. (1982). Managing the process of corporate development. In Taylor B. & Hussey D. The Realities of planning. Oxford, Pergamon Press, Pp101-133.

Taylor B. (1982). The use of scenarios in planning. In Taylor B. & Hussey D. The realities of planning. Oxford, Pergamon Press, Pp 216-225.

Taylor B. & Hussey D. (1982). The realities of planning. Pergamon Press, Oxford.

Taylor B. (1984). Strategic planning - Which style do you need? Long Range Planning, Vol 17, Number3, June, 51-62.

Taylor B. (1986). Corporate Planning for the 1990's : The new frontiers. Long Range Planning, Vol 19, Number 6, 13-18.

Thomas D.R.E. (1978). Strategy is different in service businesses. Harvard Business Review, July/Aug, 158-165.

Unctad (1979). Comparative labour costs. Unctad V, Item 14(b), supporting paper TD/222/Supp4, Manila.

U.S. Maritime Administration (1977). The maritime aids of the six major maritime nations. Washington.

U.S. Maritime Administration (1978). Maritime Subsidies 1978. Washington.

U.S. Maritime Administration (1982). A guide to strategic planning for the U.S. liner industry. Washington.

Vancil R.F. & Lorange P. (1975). Strategic planning in diversified companies. Harvard Business Review, Jan/Feb, 81-90.

Van Lier J.A.A. (1979). Bulk and liquid shipping cargo capacity for American security. Paper presented at the Propeller Club of the United States. American Merchant Marine Conference, New Orleans, 23-25.

Walker Lewis W. (1984). The CEO and corporate strategy in the eighties : Back to basics. Interfaces 14 : 1 Jan/Feb, 3-9.

Weber M. (1964). The theory of social and economic organization. Free Press, New York.

Weick K.E. (1969). The social psychology of organizing. Addison-Wesley, Reading, Mass.

Weick K.E. (1976). Educational organizations as loosely coupled systems. Administrative Science Quarterly, 21, 1-19.

Wernham R. (1984). Bridging the awful gap between strategy and action. Long Range Planning, Vol 17, Number 6, 34-42.

Westwick C. & Shohet P.S.D. (1976). Investment appraisal and inflation. ICAEW, London.

Wheelwright S.C. (1984). Strategy, management and strategic planning approaches. Interfaces 14 : 1, Jan/Feb, 19-33.

Wills L.A. & Beasley J.E. (1982). The use of strategic planning techniques in the U.K. Omega. Vol 10, Number 4, 433-440.

Zeleny M. (1981). Satisficing, optimization, and risk in portfolio selection. In Derkinderen F.G.J. & Crum R.L. (eds) Readings in strategy for corporate investment. Marshfield, Mass, Pitman, 200-219.

Appendix 1

Structure of Interviews with Shipping Companies

Interviewees were encouraged to discuss their approach to investment and financing decisions in a broad way. Nevertheless all interviews followed the broad structure outlined below.

1. General company information

- (a) Structure - parent/subsidiary etc.
- (b) Place where strategic decisions relating to shipping investments are made.
- (c) Shipping activities:
 - transportation of particular products
 - world wide or restricted operations
 - liner trades
 - bulk trades
 - tramp market
 - transportation for a particular company/s
 - other

2. Objectives and targets

- (a) A specific question was asked in all cases as to the extent to which share price or wealth maximisation were seen as objectives.
- (b) Overall objectives - including reference to any particular objectives/problems associated with family/private companies.
- (c) The nature and extent of any financial targets set, covering such things as profits, growth and dividends, and ways in which these have changed over time and with different market conditions.

3. Corporate planning systems.

Questioning in this area developed as the thesis progressed. In the pilot study questioning concentrated on the identification of the main strategic issues considered in recent decisions (see 4(d) below), together with the identification of the kind of economic indicators or trade forecasts made or used. The pilot study indicated the need for further questioning in the area. Companies were thus asked to provide an indication of their approach to planning in terms of :

- (a) Whether a system of corporate planning was in use.
- (b) If so, the period ahead for which plans were made.
- (c) The nature of the planning and review process. In particular, whether the process occurred on a regular basis or on an ad hoc basis for new investments.
- (d) Whether a system of annual budgeting existed, and the links between the budgetary and planning systems, and specific capital project approval.

In later interviews, and certainly in all the interviews which took place in the USA, much more time was devoted to questioning about the planning systems themselves, and the nature of the information collected for these systems. The approach identified in the U.S. Maritime Administration publication "A guide to strategic planning for the U.S. liner industry" was adopted as the base. This implies a far greater collection of background information for use in the decision making process. More detailed questions were thus asked about this information, as detailed in section 5(c) of this appendix.

4. Investments and their associated strategies

- (a) Whether any vessels had been added to their fleets in the last five years, and if so, the number and type, together with details of the time of acquisition and the age of the vessels acquired.
- (b) The likely period of holding such vessels within the fleet.
- (c) Whether it was the intention to acquire any more vessels in the next five years. If so, an indication of age and type was requested.

- (d) The main strategic issues which were considered in recent vessel acquisitions, or those expected over the next five years. These included areas such as :

- diversification
- risk reduction
- replacement
- expansion
- speculation

All companies were encouraged to discuss this area widely, although consideration of specific acquisitions was seen as providing a focus for discussions. As interviews progressed discussions also focussed in more detail on issues related to strategic positioning, in terms of such things as the analysis of strengths and weaknesses, the ability to respond to opportunities and threats, and the identification of actions and strategies aimed at improving the strategic position.

5. Project Appraisal

- (a) Whether vessels were appraised as individual projects, or as part of an overall system.
- (b) The length of time for which it was expected vessels would be used.
- (c) The nature of the information collected to support the investment decision. In the pilot study questioning on background information and forecasts used in the appraisal process was fairly broadly based. Questions thus concentrated on identifying economic indicators and estimates of trade levels which were used, in the areas of :
- world trade
 - economic indicators
 - estimates of trade for particular categories or sectors.

Companies were asked to provide details of the types of indicators used, and of forecasts made or used (together with the period covered), wherever possible.

Thereafter, as the thesis progressed the questioning in this area became more detailed, as links with corporate planning systems became more apparent. Detailed questioning about the information used in the decision making process was thus extended

to cover the following areas:

- industry data
- company data
- market data
- competition/capacity data
- other environmental data.

It should be noted that the responses were particularly variable, with whole areas being effectively irrelevant to many companies, depending upon their activities. In other cases responses in individual areas were very detailed. In such cases the detailed sections of the study referred to in section 3 were used as the base for extended questioning.

- (d) The type of specific estimates made of future events/flows which are incorporated into the decision making process, together with an indication of the period of time covered by such estimates. Specifically, whether estimates were made for the following:

- operating costs
- operating revenues
- disposal values
- corporate cash flow statements
- corporate income statements
- corporate balance sheets
- debt service requirements

- (e) Methods of adjusting estimates for inflation.

- (f) Criteria used in evaluating projects, specifically :

- payback
- accounting rate of return
- net present value
- internal rate of return
- break-even freight rates
- others

- (g) Where discounting techniques were used, the basis of the calculation:
 - assumed 100% equity financing
 - cash flows based on the equity contribution plus debt servicing
- (h) Details of any sensitivity analyses run on projects, covering such things as changes in:
 - acquisition cost
 - operating costs
 - revenues
 - asset life
 - others (eg interest rates/exchange rates)
- (i) Ways in which risk and uncertainty were incorporated into the decision.

6. Financing Methods.

- (a) The extent to which the investment and financing decisions are separate.
- (b) How recent vessel acquisitions had been financed:
 - equity
 - retentions
 - independent loans
 - yard credit
 - other

Companies were asked whether there was a specific policy towards borrowing or whether sources were used on a more ad hoc basis.

- (c) The extent to which the choice of shipbuilder was influenced by the financial arrangements offered, together with reasons for the choice of particular yards.
- (d) Whether the maximum amount of loan would normally be taken up on:
 - new vessels
 - second hand vessels

together with an explanation as to the reason why (or why not).

- (e) The proportion of cost likely to be funded from loans for:
 - new vessels
 - second hand vessels
- (f) The normal period of loans, for both new and second hand vessels.
- (g) Security given for loans.
- (h) The extent to which market conditions influence financing methods.

7. Capital Structure

- (a) A specific question was asked in all cases, as to whether there was a view on the total level of debt overall, and the extent to which external funds were limited.
- (b) Whether there was a limit to the total amount of debt taken up, and if so, the rationale for this. Also whether views on such a limit had changed in recent years as markets changed.
- (c) Whether there were any accounting ratios for which minimum ratios were considered necessary, e.g. interest coverage, cash adequacy etc..
- (d) A specific question was asked on whether the organisation worked towards the achievement of a particular long run capital structure, which is broadly adhered to over time. If so, what percentage is aimed for (using $\text{debt}/(\text{debt} + \text{equity})$).
- (e) Whether views on capital structure had been affected by current market conditions.
- (f) Perceptions of leasing in relation to capital structure ratios.
- (g) A specific question was asked as to whether in considering the level of debt, any attempt was made to assess the impact of changes therein on the value of ordinary shares, either in general terms or in a quantified way. If so, details were requested.
- (h) Whether further equity had been considered, together with reasons as to why/why not. If it had, were attempts made to quantify its cost?
- (i) Whether other forms of finance had been considered, eg. leasing, hire purchase, convertibles. The rationale for the use, or rejection, of particular methods of funding, were also sought.

(j) If discounting techniques were used, what rate of discount was used (as a percentage)?

Was this rate based on :

- an estimate of the weighted average cost of capital.
- the interest rate on the main loan.
- a minimum cut off rate.
- some other rate.

The rationale was sought.

(k) Views on currency risk and attempts to reduce it (if any).

Appendix 2Participating Companies/Individuals

Alcoa Steamship Company, Inc. New York. (A subsidiary of Alcoa)

American Trading Transport Co Inc. New York.

Apex Marine Corporation. Lake Success, New York.

George Bell. Dublin.

Ben Line Steamers Ltd. Edinburgh.

Bolton Steam Shipping Company Ltd. London.

Booker Line. Liverpool. (A subsidiary of Booker McConnell plc)

Burmah Oil Tankers Ltd.. London. (A subsidiary of The Burmah Oil plc)

Century Chartering Co, Inc. New York.

Chandris (England) Ltd. London.

Cunard Steamship Company plc. Hammersmith. (A subsidiary of Trafalgar House plc)

Diamatis Pateras. London.

Denholm Group. Glasgow.

Ellerman Lines Ltd. London.

Elpidon Ltd. London.

Energy Transportation Corporation. New York.

Exxon International Company. New Jersey.

Farrell Lines Inc. New York.

Furness, Withy & Company Ltd.. London.

J. & A. Gardner & Co. Ltd.. Glasgow.

Gibson, Andrew. New York. (Ex president Delta Lines)

Golotrade Shipping and Chartering Inc.. New York.

Graig Shipping plc. London.

Gulf and Eastern Steamship and Chartering Corporation. New York.

Harrisons (Clyde) Limited. Glasgow.

Hogarth Shipping Company Limited. London.

Interport Marine Agencies Ltd. London.

Irish Shipping Ltd. Dublin.

London & Overseas Freighters plc. London.

Lyle Shipping plc. Glasgow.

Marine Transport Lines Inc. New York.

McLean Industries Inc. New York.

Moore McCormack Resources, Inc. Stamford, Connecticut.

Ocean Transport & Trading plc. Liverpool.

Ogden Marine Inc. New York.

Overseas Container Lines Ltd. London.

Overseas Shipholding Group Inc. New York.

Peninsular and Oriental Steam Navigation Company. London.

Point Shipping Corporation. New York.

Prudential Lines Inc. New York.

Reardon Smith Line Ltd. Cardiff.

Scio Shipping Inc. New York.

Sea Containers Inc. New York.

Sea-Land Service Inc. New Jersey.

Southern Star Shipping Co Inc. New York.

Stephenson Clarke Shipping Ltd. London. (A subsidiary of Powell Duffryn plc)

Stolt-Nielsen Inc. Greenwich, Connecticut.

Texaco Inc. White Plains, New York.

Universe Tankships Inc. New York.

Victory Carriers Inc. New York.

Waterman Steamship Corporation. New York.

Appendix 3

Participating Banks

Bankers Trust. London.

Bankers Trust. New York.

Cayzer Irvine. London.

Chase Manhattan. New York.

Chemical. New York.

Citibank. London.

Continental Illinois. London.

Finance for Shipping. London.

Grindlay Brandt. London.

Guinness Mahon. London.

Hambros. London.

Irving Trust. New York.

Kleinwort Benson. London.

Morgan Guaranty Trust. New York.

National Westminster, USA. New York.

Nordic. London.

Shipping Finance Corporation. Dublin.

U.S. Maritime Administration. Washington.

Williams & Glyn. London.